

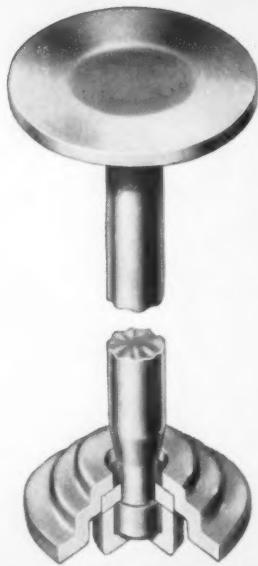
Chilton's MOTOR AGE

SEPTEMBER 1956



Hook

Jobber Executive Edition—follows page 32



Conventional Valve

Free Valve

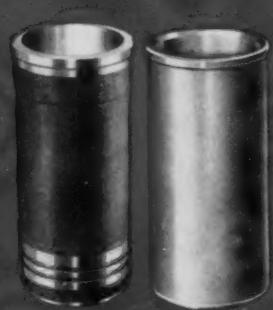
Sodium-Cooled Valve



Sealed Power KromeX
Piston Ring Sets



Sealed Power FX Pistons



Sealed Power
Cylinder Sleeves



Sealed Power Valves



Sealed Power
Water Pumps



Whether you're re-valving passenger cars, trucks, busses or tractors, Sealed Power Valves will best meet your replacement requirements. There's a Sealed Power Valve of the right steel and right design for every installation in the complete Sealed Power valve line.

Sealed Power Free Valves often give five times the service of ordinary valves, because rotation ends the main causes of valve burning. And Sealed Power Sodium-Cooled Valves run cooler and last longer in the special situations for which they are designed.

Always install Sealed Power KromeX Ring Sets

Any engine that's worth re-ring deserves the best ring sets you can buy—Sealed Power KromeX Ring Sets. Because so much of the cost is labor, and so little saving is realized by using cheap rings!

Every Sealed Power KromeX Set has a chrome-faced top compression ring, and chrome-faced side rails on the steel oil ring. They seat in fast, and save oil from the very beginning! *And how they wear!*

SEALED POWER CORPORATION • MUSKEGON, MICHIGAN

Sealed Power Piston Rings

BEST FOR RE-RING! BEST FOR RE-BORE!

STOCK UP NOW FOR PROFITABLE WINTERIZING AHEAD WITH PERMATEX COOLING SYSTEM PRODUCTS

A COMPLETE LINE



**3 pairs of Cannon Stretch Nylons
with any 2 cases of these money-
making Permatex Products**

Full fashioned—flattering neutral shade—
60 gauge—15 denier—attractive gift box.

This offer starts September 1, 1956 and ends December 31, 1956.

No. 40D Block and Head Sealer. Seals cylinder cracks—split valve seats and parts—cracks in water jackets and cylinder heads.

No. 76M Radiator Sealer (liquid). Stops leaks and seepage in radiators, pump connections, water jackets. Compatible with all anti-freezes.

No. 38M Water Pump Lubricant and Radiator Anti-Rust. Affords full protection. Lubricates water pump parts—eliminates noise—reduces wear—prevents further rust and scale deposits.

No. 18E Heavy Duty Radiator Cleaner. For badly neglected cooling systems. Quickly dissolves rust, scale, lime—completely restores radiator circulation.

No. 77L Cooling System Cleaner and Conditioner. A complete cooling system service in one package. Cleaner (top of can) removes rust, scale, oil and grease. Conditioner (bottom) stops rust reforming—stops leaks and seepage.

Order from your jobber,
or write us direct now!

PERMATEX COMPANY, INC.

Brooklyn 35, N.Y. • Kansas City 15, Kans.

More Than 50 Chemical Products
for Better Automotive Maintenance





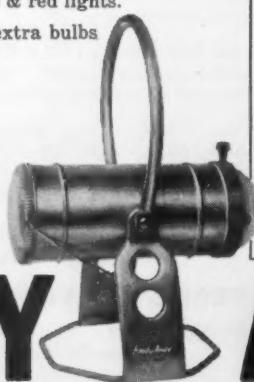
**Mister...this is the
emergency light
you've always wanted...
now you can own it
for only \$1.95***

***Yours for \$1.95 when you buy \$30 in Blue Streak Wire & Cable**

- RED FLASHING LIGHT VISIBLE FOR A MILE!
- 25 FT. EXTENSION lets you use white beam close-up while red safety beam warns oncoming traffic.
- 500 FT. CLEAR WIDE-ANGLE LIGHT.
- HANDY SWIVEL HOOK for hanging.
- 4-WAY SWITCH operates white & red lights.
- Complete with battery and two extra bulbs

*talk to your
Blue Streak
supplier today
about your*

HANDY ANDY Flashing Lantern



a \$7.85 value for \$1.95

How To Get Yours At This Amazing Price:

Place your order today with your Blue Streak jobber! You don't have to buy any special assortments... just the Blue Streak or Standard items you need:

Ektron Battery Cable... Ektron Wire... Ignition Cable Sets... ground straps, solderless terminals and tools, battery hold downs, extension cords and lights... they all count toward your \$30 purchase.

You need these items anyway. Order them now and get the brightest deal of the year—a \$7.85 HANDY ANDY for only \$1.95. See your Blue Streak jobber today! Or write to Standard Motor Products, Inc., 37-18 Northern Boulevard, Long Island City 1, New York.

Offer Expires December 31, 1956

Chilton's MOTOR AGE

WITH WHICH IS COMBINED AUTOMOBILE TRADE JOURNAL

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For THE AUTOMOTIVE SERVICE INDUSTRY

Vol. 75, No. 10

September, 1956

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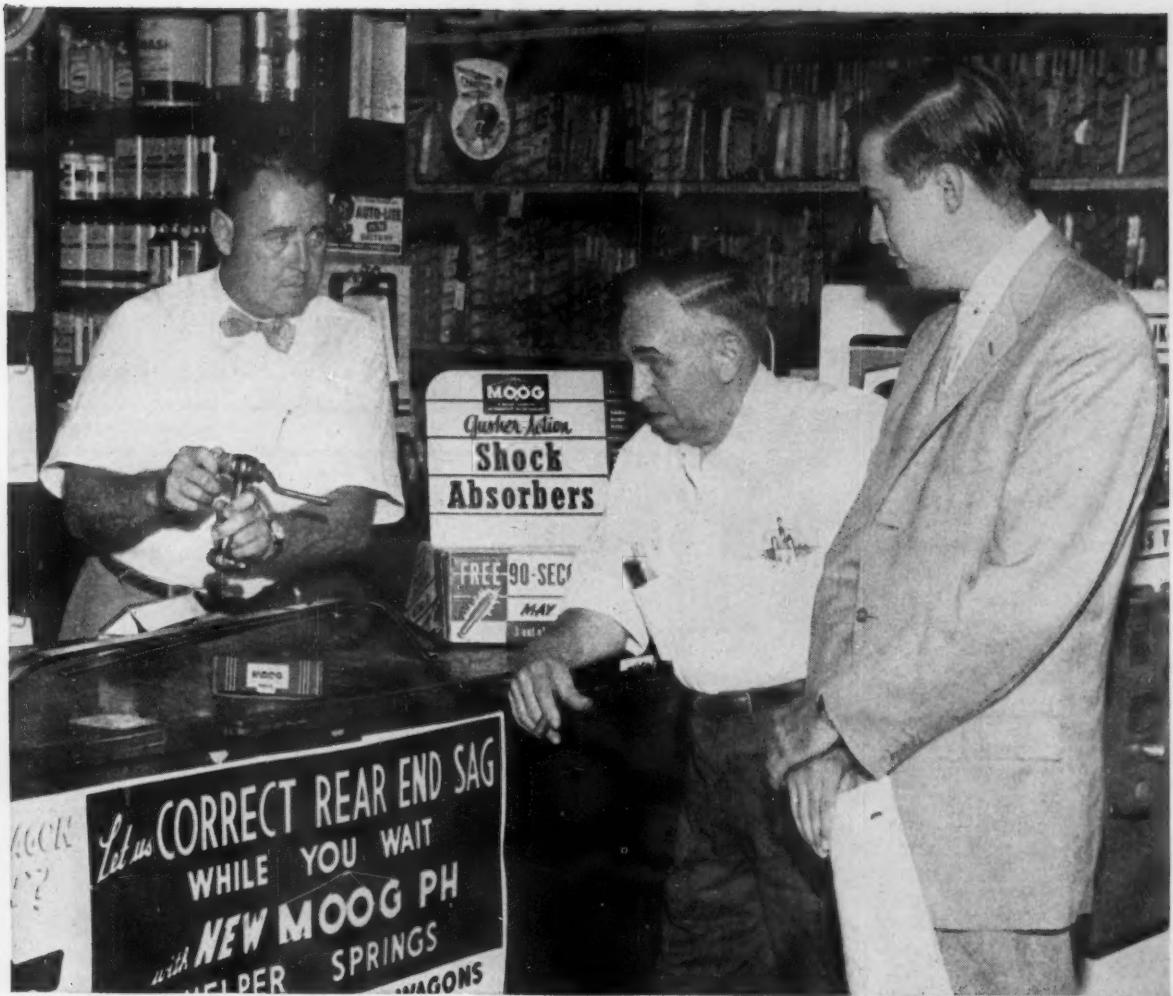
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MOOG

means more "under-the-car" business

E. W. "Pop" Niebling has operated an auto repair shop in St. Louis for 36 years. He recently decided to go after more "under-the-car" business because . . .

"When you sell a front-end job, you're selling safety. So the customer has his pocketbook open, and there's no bickering over price. And there are fewer headaches due to come-backs."

As a Moog Jobber, Tom Mills of Auto Parts Co., St. Louis, was able to help Mr. Niebling in many ways. First, he went over the complete Moog line of chassis and suspension parts with "Pop." He pointed out the special profit opportunities in exclusive Moog items, such as the Ball-Bearing Idler Arm and PH Helper Spring. Finally, Tom Mills put up a Moog Wall Chart in Niebling Auto

"The poor man's power steering," says Jobber Tom Mills demonstrating the Moog Ball-Bearing Idler Arm for Garage-man "Pop" Niebling, as Joe Giebe (r.) of Moog looks on.

Repair to simplify ordering of parts.

Today "Pop" Niebling's "under-the-car" business is increasing fast with a Moog stock. And Jobber Mills' sales figures show that more and more garagemen are following "Pop's" plan for beating rising operating costs. Sales of Moog parts at Auto Parts Company are up more than 100% over last year!

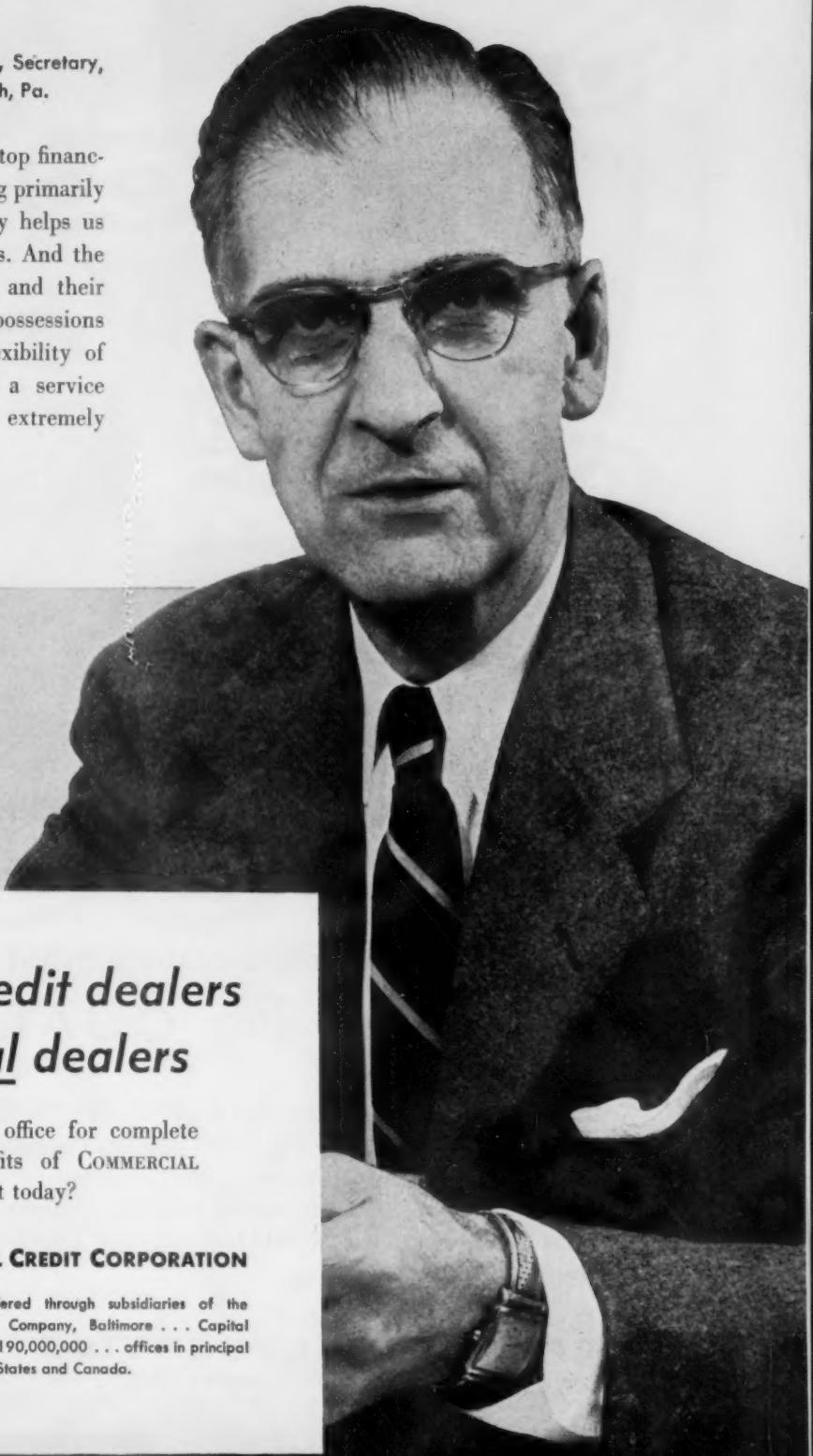
Don't overlook "under-the-car" profits! Cash in on all six of Moog's great product groups: Leaf Springs, Coil Springs, Coil Action, Tie Rod Ends, Shackles and King Bolt Kits. See your Moog Jobber, or contact Moog Industries, Inc., St. Louis 14, Missouri. *Make it soon!*



"Gives us a service we need... in today's market"

says Ford dealer **JOSEPH MANSMANN**, Secretary,
Haller's Mt. Lebanon Garage Co., Pittsburgh, Pa.

"COMMERCIAL CREDIT PLAN means one-stop financing and a minimum of red tape. Dealing primarily with one well-known finance company helps us maintain close contact with customers. And the close cooperation of the local office and their prompt collection follow-up keep repossession to a minimum. We feel that the flexibility of COMMERCIAL CREDIT PLAN gives us a service we need in order to sell in today's extremely competitive market."



Commercial Credit dealers are successful dealers

Write or call our nearest office for complete information on the benefits of COMMERCIAL CREDIT PLAN. Why not do it today?



COMMERCIAL CREDIT CORPORATION

A service offered through subsidiaries of the Commercial Credit Company, Baltimore . . . Capital and Surplus over \$190,000,000 . . . offices in principal cities of the United States and Canada.



Where performance counts most
GIVE THEM Fm QUALITY!

Whether your customer is plowing fields, matching wits with traffic lights or working a truck for profit, he's interested in *top* performance! Longer engine bearing life means dollars saved. Give your customers Fm quality in replacement engine bearings. Federal-Mogul engine bearings have led the field in quality and sales for more than 30 years!

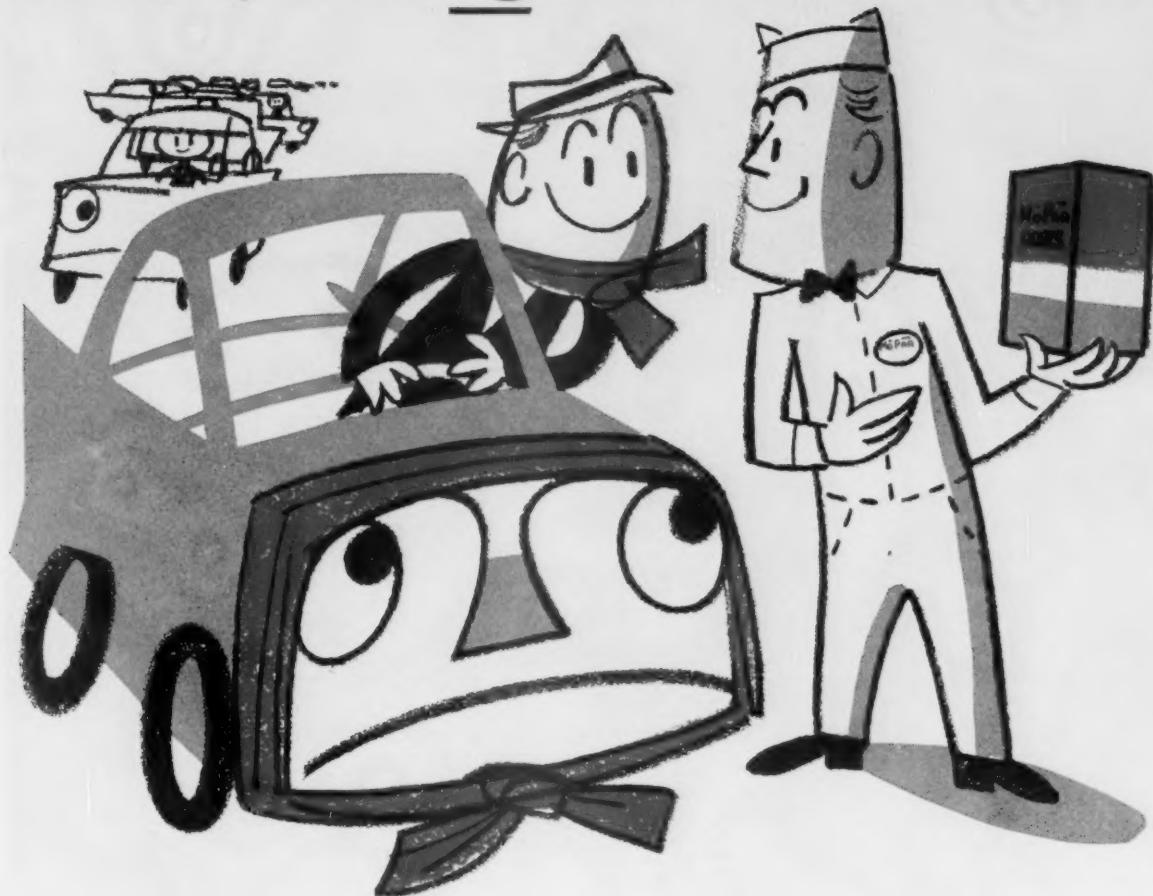
FEDERAL-MOGUL SERVICE

Division of Federal-Mogul-Bower Bearings, Inc.



RESEARCH • DESIGN • METALLURGY • PRECISION MANUFACTURING • SERVICE

Get ready for a big boost in fall business!



There's a lot of parts and accessories business for you in cold-weather checkups. That's why it'll pay you handsomely to tie-in with the big, powerful cold-weather promotion MoPar is launching for you next month. It'll send owners of Plymouth, Dodge, De Soto, Chrysler and Imperial cars and Dodge Trucks in to your shop for checkups. It'll reach one in four of the car-owning families in your neighborhood!

Make this advertising drive bring more dollars to

your doorstep! Take the few minutes needed to put up the free MoPar posters, displays and merchandising pieces. They'll let car owners know your shop is the place to get the MoPar cold-weather checkup.

MoPar parts are the only parts engineered and factory-approved by Chrysler Corporation. They are conveniently available in your area—from Plymouth, Dodge, De Soto and Chrysler dealers and MoPar Parts Wholesalers.

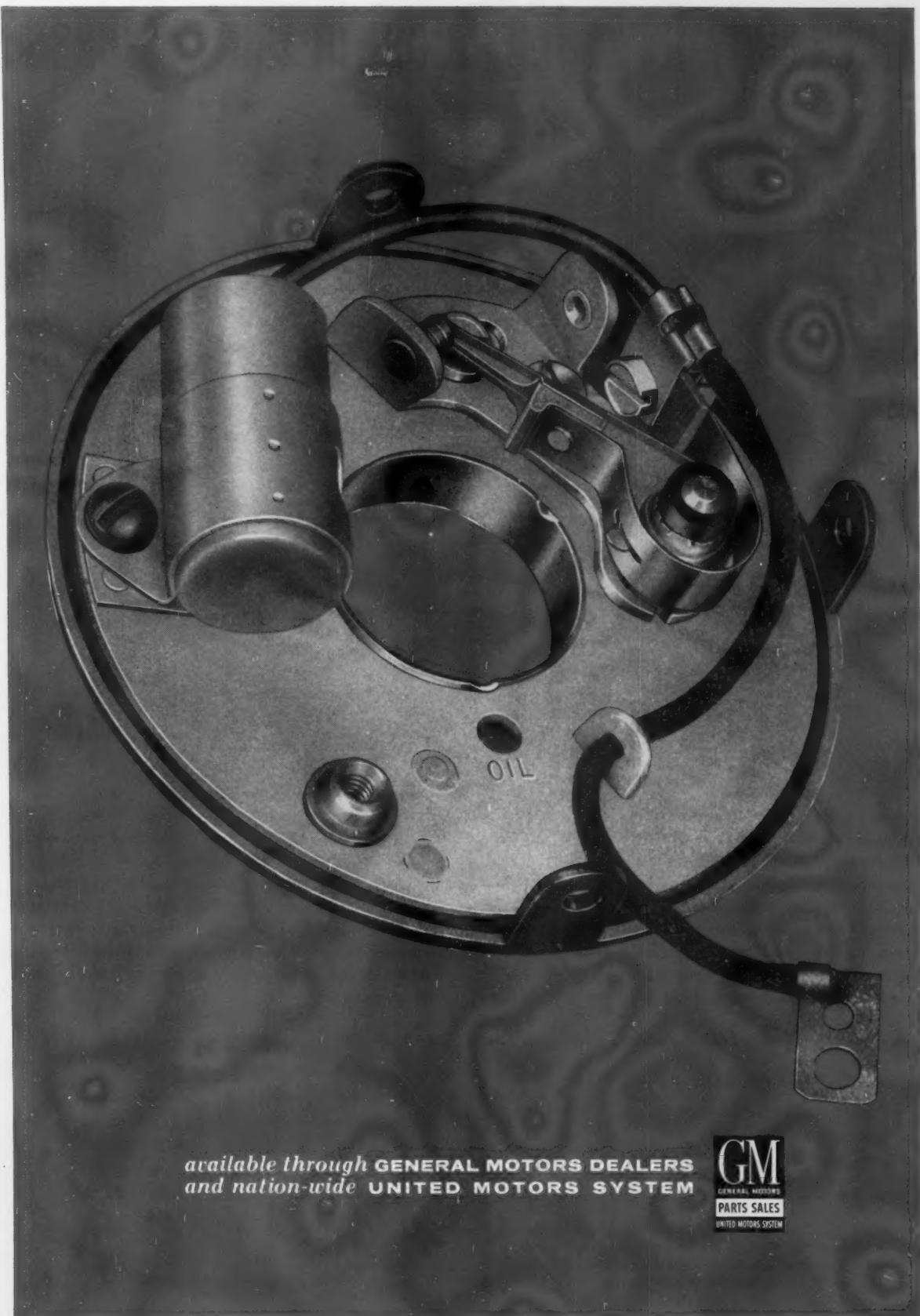
BIG, FULL-PAGE ADS IN

THE SATURDAY EVENING POST . . .	October 13
POPULAR MECHANICS	October
POPULAR SCIENCE	October

FREE FULL-COLOR POSTERS, PENNANTS, BANNERS AND MERCHANDISING PIECES are available from your MoPar Parts Wholesaler. Use them to make the MoPar Cold-Weather Checkup Promotion boost fall business for you!



CHRYSLER CORPORATION PARTS DIVISION



available through **GENERAL MOTORS DEALERS**
and nation-wide **UNITED MOTORS SYSTEM**



DELCO-REMY COMPLETE BREAKER PLATES MAKE REPLACEMENT EASIER, Surer

There are plenty of customer advantages to help you sell Delco-Remy pre-adjusted, center-bearing type breaker plate assemblies . . . extra advantages, too, for the man who does the installing. Fact is, all he does is put the plate in the distributor! Contact points are already aligned, spring tension already adjusted, condenser mounted, and clearances already checked. Looking at it from the mechanic's viewpoint, Delco-Remy's complete replacement breaker plate assembly is a real time and work saver when servicing Delco-Remy distributors.

And here are the mechanical advantages the Delco-Remy complete breaker assembly offers the customer:

- ① Scientifically spaced support bearings provide maximum stability under all operating conditions.
- ② Smooth motion of movable plate on molded anti-friction bearings allows quick, accurate response to sudden engine speed changes.
- ③ Built-in oil-retaining felt provides dependable, long-term lubrication.
- ④ Chemically treated support plate increases service life by resisting surface corrosion and "grooving."

Breaker plate assembly packages are available to cover the original equipment replacement needs of many 6- and 8-cylinder late-model passenger cars from 1949 through 1956.

See your General Motors car or truck dealer or United Motors dealer for complete description and application data. Order a stock of these Delco-Remy complete breaker plates *now*.

DELCO-REMY • DIVISION OF GENERAL MOTORS • ANDERSON, INDIANA

GENERAL MOTORS LEADS THE WAY—STARTING WITH

Delco-Remy
ELECTRICAL SYSTEMS

Sell every car you service the RAYBESTOS 7-POINT BRAKE CHECK and watch your brake service profits grow

HERE'S ALL YOU DO

- 1.** Pull front wheels and inspect linings
- 2.** Check brake drums
- 3.** Inspect front wheel bearings
- 4.** Clean brake assembly
- 5.** Check hydraulic system
- 6.** Adjust brakes or recommend a reline
- 7.** Road test brakes

You get paid for every car you check

HARD-HITTING SALES AIDS AND NATIONAL ADS WILL SUPPORT YOU



MAKE WHEELS OFF PAY OFF! SEE YOUR RAYBESTOS JOBBER TODAY!

Reline with
Raybestos
AMERICA'S BIGGEST SELLING BRAKE LINING

THESE RAYBESTOS QUALITY PRODUCTS
WILL SATISFY ALL YOUR CUSTOMERS



Raybestos "Contour Ground" Lined Shoes—the answer to all fixed anchor brake problems—are perfect for adjustable anchor brakes, too. Raybestos "Contour Grinding" assures true shoe radius—perfect lining-to-drum contact. It permits no high spots—no spongy pedal action due to excessive belly contact.

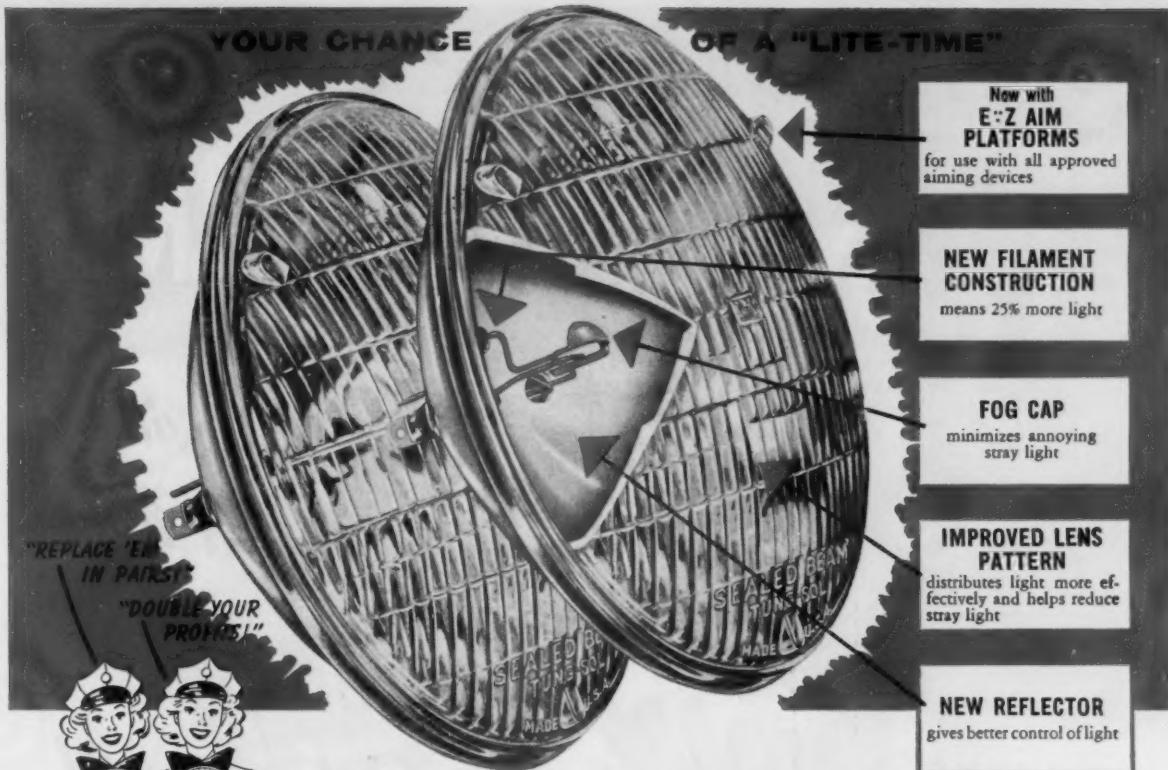


Raybestos PG Sets—All Raybestos brake linings are Proving Ground tested for greater highway safety. And only Raybestos linings are made by 7 different manufacturing processes to provide factory-packed lining combinations for every make and model car. They stop faster—last longer.

RAYBESTOS DIVISION of Raybestos-Manhattan, Inc., BRIDGEPORT, CONN.

RAYBESTOS-MANHATTAN, INC., Brake Linings • Brake Blocks • Clutch Facings
Fan Belts • Radiator Hoses • Industrial Rubber, Engineered Plastic, and Sintered Metal
Products • Rubber Covered Equipment • Asbestos Textiles • Laundry Pads and Covers
Packings • Abrasive and Diamond Wheels • Bowling Balls





That's quite a market . . . totalling well into the millions of cars with outdated headlighting! Peek through the lens at the headlamp filaments. If you don't see fog caps, they're old-type lamps and you've got a live prospect for a pair of new Tung-Sol Vision-Aid Headlamps. You can boost your sales substantially just by a quick and convincing demonstration of these great headlamps.

Point out to the customer the more powerful beam that gives 80 extra feet of seeing distance. Demonstrate the fine glare control features of the fog cap. Once he

realizes the added safety and driving comfort he's missing, he'll switch over to Vision-Aids!

And don't forget: when replacing a burnout, sell that second Vision-Aid headlamp for balanced lighting!

For full details, including self-explanatory demonstration kit, contact your Tung-Sol supplier.

TUNG-SOL ELECTRIC INC., NEWARK 4, N.J.

Sales Offices: Atlanta, Columbus, Culver City, Dallas, Denver, Detroit, Melrose Park (Ill.), Newark, Philadelphia, Seattle, Canada: Montreal.

TUNG-SOL IS THE "ONE-STOP" LIGHTING LINE!

LAMP MERCHANDISERS

No. 70—an assortment of 70 lamps for 12-volt systems.

No. 100—an assortment of 100 lamps for 6-volt systems.

FLASHER ASSORTMENT NO. 6

A selection of flashers that services all signal systems.

**TUNG-SOL®
AUTO LAMPS
SIGNAL FLASHERS**

- Here's your chance to make extra

DUPONT



Football's famous Frank Leahy
coached Notre Dame's Fighting Irish to a record 106 victories in 10 years.

Your customers will
hear about it from

FRANK LEAHY

on DuPont's weekly TV football show!

TIE IN YOUR OWN WINTERIZING SERVICE WITH
"ANTI-FREEZE WEEK" AND YOU WILL PROFIT
FROM DU PONT'S ADVERTISING AND PUBLICITY

Read how
"Anti-freeze Week"
can help you make
extra fall
profits



Joe Davis of Peoria, Illinois, is shown with some of the parts, chemicals, and accessories he sold during "Anti-Freeze Week" for an extra \$1,000 profit. This is the kind of business you can do when you tie in with "Anti-Freeze Week."

"ANTI-FREEZE WEEK" SELLING SLANTS

1. Put up your "Zerone" and "Zeron" display pieces now. It's the most important thing you can do to make all of Du Pont's powerful advertising pay off for you at your own service station.
2. Actual driveway tests prove that a sale can be made 6 out of 10 times if the dealer will just ask for the order. Remember, the more you sell—the more you profit. So ask for the job every time!
3. When a motorist agrees to have his anti-freeze installed, he's a perfect prospect for a complete winter checkup, plus a lube job or oil change. Plan now and get your share of this extra business.

GET READY FOR THIS BIG, PROFITABLE PROMOTION. PUT UP YOUR COLORFUL

profits this fall... tie in with

ANTI-FREEZE WEEK

CHECK THIS MAP TO SEE WHEN IT COMES TO YOUR LOCAL AREA



© AM. MAP CO.—11693

And...

In addition to
local television you
get



Billboards In more than 1,800 local communities, giant posters will keep reminding motorists to buy "Zerone" and "Zerex" from you.

Radio Local radio commercials, in town and on the farm, will tell your customers it's "Anti-Freeze Week" and time for "Zerone" or "Zerex."



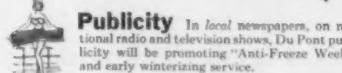
Newspapers Daily ads in your local newspapers will be selling your customers on early winterizing and a DuPont anti-freeze.



Life Magazine The big "Zerone" "Zerex" ad in LIFE is part of a big anti-freeze promotion that will result in window displays in your leading local stores.



Publicity In local newspapers, on national radio and television shows, DuPont publicity will be promoting "Anti-Freeze Week" and early winterizing service.



DUPONT "ZERONE" and "ZEREX" DISPLAY PIECES If you haven't yet received your kit, call your supplier today!

Phony Fables about Oil Seals



Fable No. 6

"Takes luck to find the one you need!"

Not with a National Oil Seal service stock! Big, sturdy National cabinets keep the stock neat, clean and in full view. The easy-reading stock check card tells you the right seal number instantly. All seal cartons are clearly marked with the proper number — never takes more than a moment to find exactly the seal you need.

With National Oil Seal service stocks, you get only fast-moving seals for late model popular cars and light trucks. Be sure of having seals you need—and being able to find them.

Ask your jobber about a National Seal stock today!



Support this
industry-wide
program



3783



Small National stock for lube stations.
Over 50 front wheel seals.



NATIONAL MOTOR BEARING CO., INC.

GENERAL OFFICES: Redwood City, California
PLANTS: Redwood City, California and Van Wert, Ohio



SELLING SLANTS OF THE MONTH!

MONEY-MAKING FACTS FOR DEALERS

Special report from dealers:

"PRESSURE CAP SALES JUMP WITH NEW AC COOLING SYSTEM TESTER!"

Here's a PLUS!..

Tester steps up sales of other products related to cooling system! If you have any doubts, talk to AC dealers who have bought and used the AC Tester! Now, you can quickly and easily spot cooling system troubles with this inexpensive tool. What's more, you can prove the need for replacement right in front of your customers' eyes!

The AC Cooling System Tester quickly pays for itself with the extra sales of pressure caps, hoses, hose clamps and radiator stop-leak solutions.

Here's an important reminder—The big, fall antifreeze season is just around the corner. Be prepared to garner these extra profits. Order an ample stock of AC Pressure Caps and an AC Cooling System Tester now!

Available from your regular AC supplier.

Surveys Show: 4 out of 10 pressure caps should be replaced.

AC SPARK PLUG ⚭ THE ELECTRONICS DIVISION OF GENERAL MOTORS



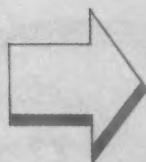
FILLER CAPS





SELLING SLANTS

MONEY-MAKING FACTS



AC Presents a BIG Fall



SPECTACULAR NEW POINT-OF-SALE PACKAGE

You've never seen anything like this display before! A giant (30" high), eye-stopping, half-round, plastic AC Spark Plug that mounts on the *OUTSIDE* of your show window. Accompanied by brilliant Day-Glo window posters to sell fall service and spark plug change. Ask your regular AC supplier how you obtain this powerful campaign package!

Plus

AC Spark Plug
National
Advertising



BILLBOARDS

Here is an attention-getting fall AC Spark Plug billboard — 5000 of 'em in major marketing areas across the country.

MAGAZINES AND TELEVISION

This fall, AC Spark Plugs will be advertised in leading consumer magazines having a combined circulation of over 38,000,000.

And, millions of TV viewers will be exposed to AC advertising when they watch the big NBC Sunday afternoon spectacular — WIDE WIDE WORLD — shown on NBC channels covering 96% of all TV sets.

AC SPARK PLUG THE ELECTRONICS DIVISION OF GENERAL MOTORS

OF THE MONTH !
FOR DEALERS

Spark Plug Program for You!

2

**"WIN A CHEVROLET
CORVETTE" CONTEST!**

10 Brand-New Corvettes to be
Given Away to AC Dealers in
This Big 60-Day Contest



1956 Corvette
Illustrated

You may be one of the 10 lucky AC dealers (or dealer employees) who will receive this glamorous Christmas present from AC — a sleek, beautiful 1957 Chevrolet Corvette.

Contest will run from September 15 to November 15. Your regular AC supplier has all the details, including official rules and entry blanks. Here are a couple of tips though. It's *easy* to enter the contest and you can enter as often as you wish!

ASK YOUR AC SUPPLIER





SELLING SLANTS

MONEY-MAKING FACTS

AC's BIG Fall Oil Filter

Win An All-Expense-Paid
Trip For Two To The Bowl
Game of Your Choice!



It's Easy To Win the AC Oil Filter 60-Day BOWL-ARAMA Contest!

Picture yourself aboard a big airliner en route to the Bowl Game of your choice to be held this coming New Year's Day! Sounds terrific, doesn't it? It is. It's a three-day trip including the finest hotel accommodations, meals and reserved seats for all the parades and pageantry connected with the Bowl Games.

The AC BOWL-ARAMA Contest is easy to enter, and dealers and their employees can enter as many times as they wish.

Call your AC supplier TODAY! He has all the details, including official rules and entry blanks. Don't miss this opportunity.

AC SPARK PLUG THE ELECTRONICS DIVISION OF GENERAL MOTORS

OF THE MONTH ! FOR DEALERS

Program for YOU!



The ALL-AMERICAN Engine GUARD WINDOW DISPLAY

To Sell Your Brand of OIL and AC FILTERS

Here is a point-of-sale campaign package that is a sure sales touchdown!

Coach Sludgie's pups—All-American Engine Guards—on a multicolored four-dimensional display—to help you sell more oil and AC Filters during the big fall "change" season. This display is die-cut to hold a can of your featured brand of oil and an AC Filter.

A modern mobile for that "inside the station" traffic is also included in the package.

Call on the All-American Engine Guards—to help make this season your biggest—for oil and AC Filters! This sales-upping campaign package is available to AC dealers free of extra charge. *Have your regular AC supplier order your campaign package right away.*



POWERFUL AC FILTER NATIONAL ADVERTISING



Sludgie's whole family is on the billboards this fall. Millions of motorists will be reminded that this is the "change" season as they pass the thousands of AC Filter billboards in all states!

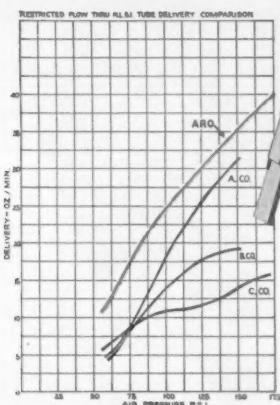


The millions of readers of Life and Collier's will see that "All-American Engine Guards" means your premium oil and AC Filters.

Yes, the All-American message will be heard on WIDE WIDE WORLD, the big Sunday NBC-TV spectacular sponsored by AC.

Exclusive ARO WARRANTY!

3 YEARS
OR
10,000
LUBE JOBS



Flow Tests Prove ARO Superiority!
The AL-207 Pump clearly outperforms—as shown by chart comparing delivery by ARO and three competitors! A standard restrictor for NLGI flow test was used, with multi-purpose grease at controlled temperature.



AL-207 LUBE PUMP

Performance of this new Pump is so outstanding, ARO backs the AL-207 Air Motor with an exclusive 3 Year Warranty!

THE ARO

"10,000 LUBE JOB" WARRANTY

The Aro Equipment Corporation warrants the AL-207 Air Motor to be free from defects in workmanship and material for 10,000 lube jobs or for a period of thirty-six months, whichever occurs first, from date of purchase.

We warrant the remainder of our lubricating equipment, including hose, against defects in workmanship and material for a period of twelve months from date of purchase.

This is the Lube Pump that does such a remarkable job—in extreme heat or frigid cold. It's one of many trend-setting features in the great new Arolube line that's sweeping ahead in popularity everywhere! See your Automotive Wholesaler now for full details.



THE ARO EQUIPMENT CORPORATION
Bryan and Cleveland, Ohio
Aro of California, 3141 S. Grand Ave, Los Angeles 7
Aro Equipment of Canada, Ltd., Toronto 15, Ontario
Offices in All Principal Cities

ARO

LUBE EQUIPMENT
Also . . . Air Tools . . . Aircraft
Products . . . Grease Fittings

"SURE I SAW IT! MY BRAKES DIDN'T HOLD!"

Remember, your customers look to you to keep their brakes safe. The best way is to make sure: *pull a wheel — look at the brake system — show the customer what's needed.* And when you reline, use Grey-Rock Balanced Braksets, the linings with the difference you can see, show and sell.



SEE the difference. Distinctive Grey-Rock brake linings look different—are different. You can see it in the many different types of linings Grey-Rock combines in sets engineered to give balanced brake action and longer lining life.

SHOW the difference ... in distinctive Grey-Rock woven and molded combinations. Where used, they provide far better brake action than molded linings alone. In other Grey-Rock sets, all-molded types give best results.

SELL the difference. When you can see and show the difference, you can sell the difference. Explain how different shoes, even in the same brake, do different work, and why different types of lining are necessary for balanced brake action and long wear.

ASK YOUR JOBBER FOR GREY-ROCK FACTORY-BONDED SHOE EXCHANGE FOR HIGHER RELINE QUALITY, LESS LABOR PER JOB, GREATER PROFITS

Only **Grey-Rock** makes
BALANCED BRAKSET LININGS
GREY-ROCK DIVISION of Raybestos-Manhattan, Inc., MANHEIM, PA.

Consistently advertised in the
POST and Farm Journal



RAYBESTOS-MANHATTAN, INC., Brake Linings • Brake Blocks • Clutch Facings • Industrial Rubber, Engineered Plastic, and Sintered Metal Products • Rubber Covered Equipment • Asbestos Textiles • Laundry Pads and Covers • Packings • Abrasive and Diamond Wheels • Bowling Balls



NOW 18 mm.



FOR FORD

Gives you complete coverage of cars with overhead-valve V-8 engines.



Your biggest volume for top spark plug profits is in overhead-valve engines. The new 18 mm. BRF82 fits all 1955-56 Ford 6's and 8's and all 1955-56 Mercurys and Lincolns. You need only 8 numbers of Auto-Lite Resistor Spark Plugs with Power Tip for complete coverage of the big overhead-valve V-8 passenger car market, as well as the market for most cars with overhead-valve 6-cylinder engines. Your customers get top satisfaction from Power Tip's better performance and economy at *all speeds*.

Power Tip was tested and proved in the laboratory and in road tests on 17 makes of cars. Many hours and thousands of miles in heavy stop-and-go traffic

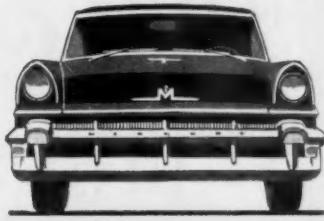
and at turnpike speed limits *proved* the outstanding performance of Power Tip at *all speeds*. Original equipment on all new Chrysler, Imperial, De Soto, Dodge and Plymouth V-8's, Power Tip already offers you a giant replacement market.

Stock up on Power Tip now. Be sure you have plenty of Auto-Lite Resistor Spark Plugs with Power Tip, in both the 14 and 18 mm. sizes. Serve your customers with the only spark plug ignition-engineered for today's engines and today's driving—Auto-Lite Resistor Spark Plug with Power Tip. *Order from your wholesaler today!*

THE ELECTRIC AUTO-LITE COMPANY TOLEDO 1, OHIO

AUTO-LITE

RESISTOR SPARK PLUG WITH POWER TIP



MERCURY



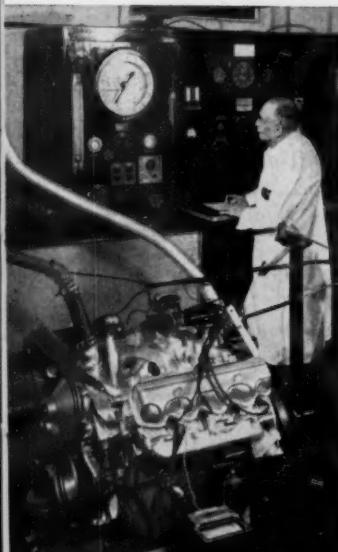
LINCOLN

**POWER TIP GIVES UP TO 5 ADDITIONAL
HORSEPOWER COMPARED TO NEW STANDARD
TYPE SPARK PLUGS!**

Dynamometer tests prove that Power Tip gives up to 5 additional horsepower compared to NEW standard type spark plugs operated in the same engine under identical conditions. Gain in horsepower is due to protruding tip that provides more effective initiation of combustion.

In addition, the Auto-Lite Resistor Spark Plug with Power Tip is hotter at low speeds to prevent fouling, and cooler at high speeds to check pre-ignition. Power Tip is the only spark plug ignition-engineered for today's engines and today's driving conditions.

ORDER FROM YOUR
WHOLESALE TODAY!





Dramatic
"NECK BREAKER"
TEST
proves

WALKER
SILENCERS
resist vibration
and road shock
longer and
better!

● What has this ingenious "muffler torture" device to do with longer muffler life? Plenty! This is the dramatic "Neck Breaker" test that determines how well and how long a muffler can withstand vibration and road shock, how it will stand up under the stresses and strains of over-the-road driving which cause metal fatigue and breakage—*one of the most important factors in exhaust system endurance.* It is here that inherent structural weaknesses of poor design first show up, particularly in modern ovals where offset inlets and outlets subject the heads to severe eccentric loads.

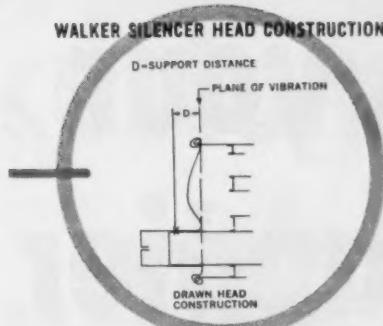
What did this test show? It proved that Walker "Precision Tuned" Silencers resist vibration and road shock up to—well, just check the figures. It proved that the shape and contour of Walker

Silencer heads eliminate the flat surface, or ring, found on the heads of many brands of mufflers that are subject to early breakage. It showed that the "bridge construction" used by Walker in tying together the head and internal unit was stronger than the loose construction found in most mufflers.

Walker does not compromise on head design. Each head on a Walker "Precision Tuned" Silencer of oval design is crowned differently to match the bushing assembly exactly, crowned differently on closely guarded Walker-designed equipment. Walker leads the way on expanded heads . . . on internally expanded bushings and internal "bridge type bracing" . . . on the right combination of design and materials to resist destructive vibration and road shock longer and better.

WALKER MANUFACTURING COMPANY OF WISCONSIN • RACINE, WISCONSIN

Exhaust Silencers • Oil Filters • Jacks

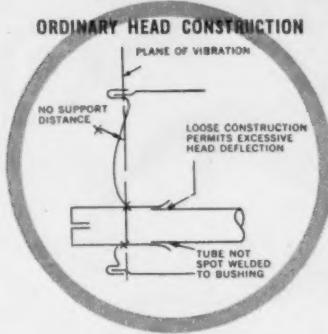


Walker Silencers embody three basic types of "Bridge" head construction: the "Drawn Head," the "Expanded and Spot-Welded," and "Inner-Flanged with Separate Bushings." Each type employs sound engineering principles that give maximum, rigid support where needed.

As in the "Drawn Head" type illustrated above, you'll notice the heavy gauge louver tube enters the neck and is securely welded considerably ahead of the *plane of vibration*.

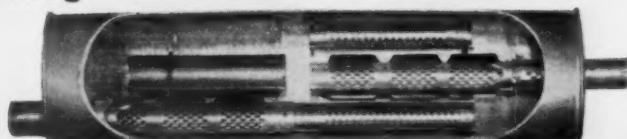
This gives resistive torque action to vibration, keeping the neck from bending at the neck radius, and eliminating fatigue stress from repeated bending beyond the steel's elastic limit.

Here's the difference!



WALKER "BRIDGE" CONSTRUCTION	ORDINARY HEAD CONSTRUCTION
 OFFSET INLET	 No Inner Support or Connection with Internal Parts
BUSHING EXPANDED AND SPOT WELDED TO HEAD BUSHING SUPPORTED AND WELDED TO INNER PARTITION NO FAILURE after 158,787 vibrations	HEAD CRACKED HERE FAILED after 9,962 vibrations
 SIDE INLET	 No Rigid Support Between Bushing and Inner Parts
BUSHING WELDED TO SUPPORTING PARTITION NO FAILURE after 186,304 vibrations	HEAD CRACKED HERE FAILED after 36,272 vibrations
 CENTER OUTLET	 Bushing Manufactured Loose from Tube
BUSHING AND HEAD BUSHING WELDED TO TUBE HERE INSIDE OF SILENCER NO FAILURE after 128,361 vibrations	HEAD CRACKED HERE FAILED after 6,598 vibrations

The right combination of all things
to make a truly great
exhaust system!



WALKER Precision Tuned SILENCERS



Keep your ...and happier



You can depend upon **WAGNER QUALITY** because Wagner Products
are used as original equipment by car, bus, truck, and trailer manufacturers.

Est.
1891

Wagner

*...the best known
name in brake service*

customers safer ..with good brakes!

reline with
Wagner CoMaX
BRAKE LINING

Your customers have a vital stake in the brand of brake lining you use. How well it performs in split-second emergency stops, in wet weather, in tortuous mountain going and regular stop-and-go operation might mean the difference between life and death to them and their families. For their safety, and your reputation, use the best . . . WAGNER CoMaX BRAKE LINING.

CoMaX is unsurpassed for quick, safe, smooth stops. In dual-friction sets, as in single friction sets, CoMaX is uniform in density, composition, and frictional qualities

throughout the service thickness of each lining. It will never compress, absorb moisture, or deteriorate with age. It withstands excessively high operating temperatures . . . contains no harmful abrasive material to injure drums.

Your customers will appreciate the safer, smoother stops . . . extra miles between relines . . . fewer brake adjustments. Exhaustive testing in the laboratory and at the proving ground assures uniform high quality in all Wagner CoMaX Brake Lining. Coverage is complete for every Car, Truck, or Bus.

All from ONE source...your WAGNER jobber!



WAGNER SHOE EXCHANGE SETS. Available "bonded-on" or "riveted-on" for all popular cars and light trucks with both standard and over-size lining thicknesses.



WAGNER LOCKHEED BRAKE PARTS. They cover every make and model of vehicle and include hard-to-find numbers not easily obtainable elsewhere.



WAGNER LOCKHEED HYDRAULIC BRAKE FLUID. Chemically balanced to function perfectly in all seasons and under all operating conditions.

**BOOST YOUR PROFITS BY BECOMING A
WAGNER FRANCHISED DEALER**



Wagner Electric Corporation
6498 PLYMOUTH AVE., ST. LOUIS 14, MO., U.S.A.
(Branches in principal cities in U.S. and in Canada)
Fill out and mail coupon for full facts on this profitable
program that's sweeping the country. No obligation.

NAME _____

FIRM NAME _____

ADDRESS _____ ZONE _____ STATE _____

CITY _____



BIGGER business...



**WHEN YOU'RE THE MAN
WHO STOCKS AND SELLS**

CARTER **FUEL PUMPS**

More and more CARTER Fuel Pumps are being installed as original equipment by leading automotive manufacturers. This means that a BIGGER replacement market is building up for you every day!

Cash in on the growing popularity of nationally-advertised CARTER Power Center Fuel Pumps . . . For full details on this BIG business opportunity, call your CARTER supplier.

CARTER CARBURETOR

DIVISION OF  INDUSTRIES

INCORPORATED

ST. LOUIS 7, MISSOURI

What makes customers come back for more?



They'll all come back if you give 'em the best. When it's
a bearing job ... just tell 'em it's **TIMKEN**!

A floor show, with a 3-piece combo, might bring 'em in. But your car-owning customer is more interested in service. And when it comes to the best in service the name that's music to his ears is "Timken". So, when you're replacing bearings, give your customer Timken tapered roller bearings. To keep 'em coming back, point out the

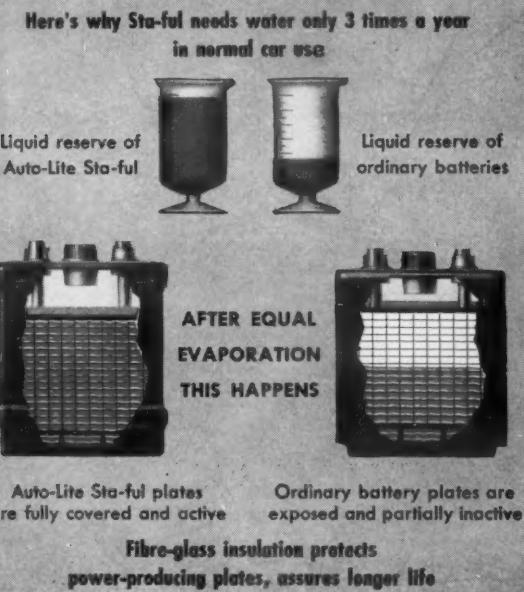
trade-mark "Timken" on every bearing! The Timken Roller Bearing Company, Canton 6, Ohio. Canadian plant: St. Thomas, Ontario. Cable address: "TIMROSCO".

TIMKEN
TRADE-MARK REG. U. S. PAT. OFF
TAPERED ROLLER BEARINGS

NOT JUST A BALL • NOT JUST A ROLLER • THE TIMKEN TAPERED ROLLER • BEARING TAKES RADIAL AND THRUST LOADS OR ANY COMBINATION



Here's Why Auto-Lite Sta-ful is America's Fastest Selling Premium Battery



sta-ful

Needs water only 3 times a year!*

*In normal car use

FAMOUS SLOGAN SUPPORTED 100%

The 2-million-mile test more than supported the famous slogan—"needs water only 3 times a year." And with this kind of conclusive proof, Auto-Lite is making sure the public knows the facts through one of the most powerful national advertising programs in industry. Advertising will appear in every major advertising medium—magazines, newspapers, billboards, and TV in selected marketing areas.

sta-ful

IS BEST BY TEST!

A tough, two-million-mile test proved Auto-Lite Sta-ful the finest battery money can buy! This conclusive test was made with *production line* Sta-ful Batteries in 100 cars of 17 different makes. They were driven in desert heat and Arctic cold.

Here are the dramatic results of that rigidly controlled test:

- 9 out of 10 batteries subjected to this test needed water only two times a year, and none needed water more than three times a year.
- Of the 100 batteries tested, not one failed.
- Over 95% of the batteries exceeded the initial cold discharge voltage requirement of a new battery.
- Over 81% exceeded the initial cold capacity requirement of a new battery.



sta-ful

IS PRICED RIGHT!

There's an Auto-Lite Sta-ful Battery for every car owner. Prices start as low as \$21.95 and the line includes both 6- and 12-volt applications. Sta-ful means better value for your customers and more profit for your pocket.

ASK YOUR JOBBER...

Ask your jobber salesman about the brand-new program on Auto-Lite Batteries. It means better value for your customers and more profit for you.

NOW DRY-CHARGED!

The entire line of Auto-Lite Sta-ful Batteries is now available dry-charged! No more worries about storage problems. Auto-Lite Sta-ful Batteries are fresh when you buy them—fresh when you sell them.

Dry-Charged Auto-Lite Sta-ful Batteries are easy to sell. You can tell your customers how easy it is to activate an Auto-Lite Sta-ful. You simply pour Activite fluid into each cell, replace the caps, and the battery will be ready for full-power action.



THE ELECTRIC AUTO-LITE COMPANY, TOLEDO 1, OHIO

AUTO-LITE

sta-ful

NEEDS WATER ONLY 3 TIMES A YEAR*

*In normal car use

Blue Sunoco is all one grade Premium Octane At Regular Gas Price



**THAT'S WHY I SWITCHED
FROM A "TWO-GRADE"
SERVICE STATION
TO BLUE SUNOCO**

And thousands more are switching from premium-priced brands to Blue Sunoco for the same reason!



Interested in a Sunoco Dealership?
A Sunoco dealership may be available in your community. Call our local office or write us direct: Sun Oil Co., Philadelphia 3, Pa.

It is Sun Oil Company's single grade policy that enables it to produce a premium octane high-test gasoline at regular gas price.

And that's why Sunoco dealers, on the average, outpump competition by 2 to 1.

SUN OIL COMPANY • Philadelphia 3, Pa.

executive section Jobber

News Notes From the Editors

Parts Prices to Ride Higher

A RATHER SUBSTANTIAL HIKE on the order of seven to nine per cent in replacement parts prices appears certain over the next few months. Higher labor, steel, rubber and other material costs already are pinching manufacturers and will be passed on.

IT NOW LOOKS AS THOUGH PRICE BOOSTS will start appearing next month and continue for a while as both car factories and independent parts makers reprice the thousands of items in their lines.

"Pilot" Equipment Show in Michigan

PLANS FOR THE FIRST AUTOMOTIVE EQUIPMENT SHOW to be held by the Michigan Automotive Maintenance Assn. have been finalized. The show will be a rather small one in contrast with other equipment shows held in the Detroit area, since it will be a "pilot" show designed to test reaction of local repair shops.

TO BE HELD ON OCTOBER 9 in connection with the association's regular meeting, the exhibit will include displays of tools, body shop equipment, etc., by nine local distributors, including Chap Associates, a local warehousing organization and the principal sponsor of the event.

IF THE SHOW GOES OVER AS WELL AS the association hopes, plans are to hold two or three similar events each year throughout the state.

Bearing Companies Merge

FINAL STOCKHOLDER APPROVAL was given to merge Federal-Mogul-Bower Bearings, Inc., with National Motor Bearing Company, Inc. National Motor Bearing will be operated as the National Seal Division of F-M-B with its basic organizational structure remaining as is.

TERMS OF THE MERGER was approved by 79 per cent of the stock of both firms. National Bearing becomes the third firm to be acquired by Federal-Mogul-Bower since December 1953.

C-A-S Activity in California

THE USE OF THE CERTIFIED AUTOMOTIVE SERVICE finance plan has made a tremendous upsurge during the past few months throughout California.

JOBBERING GROUPS--in cooperation with retailers--have combined in remodeling the C-A-S program, as well as stressing its use as a merchandising medium. The net results have been most favorable.

SINCE THE INCEPTION OF C-A-S, reports indicate that well over 2 million dollars in business has come through this credit plan and, in the belief of industry leaders, the potential is unlimited.

"Electronic Brain" Work for AC

AC SPARK PLUG DIVISION OF GM has received a \$9.84 million order to repair and modify Air Force bombing navigational computers. Work on the complex computer systems, which contain 60,000 parts each, will be done at the company's plants in Milwaukee and Flint.

THE "ELECTRONIC BRAIN" DEVICE is used in intercontinental aircraft of the U. S. Strategic Air Command. It automatically navigates the plane and drops a bombload.

Redistribution Reports Are Unfounded

TRADE REPORTS THAT GM IS PLANNING to adopt a redistribution system for UMS through warehouse distributors have no substance. There are no plans for such a move, nor is there any change contemplated now in the override incentive system for dealers who wholesale parts, as has also been reported.

U. S. ECONOMYby Neil R. Regeimbal



Plenty to Spend

AMERICAN BUYERS HAVE PLENTY TO SPEND, despite the drain of income taxes. There were 52 million families in this country last year, and their income before the federal tax payment averaged \$5,520 per family, the U. S. Commerce Dept. discloses.

AVERAGE INCOME AFTER THE FEDERAL TAX was \$4,980. Back in 1929, using the 1955 dollar as a yardstick, the amount remaining per family was about \$3,730.

A Search for Business Tax Relief

EFFECT OF FEDERAL INCOME TAX and estate tax laws on small business is being studied by the staff of the Senate-House Committee on Internal Revenue Taxation. The staff has the job of suggesting ways to give tax relief to businessmen.

REVIEW OF THE EXCISE TAX SYSTEM is another task that's in progress. A third is the survey of income tax treatment of capital gains and losses.

OPERATION

JOBBER

Aim at Identification Advertising

THERE is one kind of advertising that some jobbers overlook. For want of a better tag, we will call it "Identification Advertising" and it neatly breaks down into two major categories—a jobber's own identification as to the kind of business operated and the other category — identification of the nationally known lines of merchandise the jobber sells.

Signs Are Used

Many jobbers use both flat signs and right angle signs to make sure that their company name registers to both slow and fast-moving traffic. They also maintain well painted signs on their trucks, often playing up their address and telephone numbers.

The strong and carefully planned selling and advertising programs which most key line manufacturers conduct through national consumer media and the trade press benefits you specifically in direct proportion to the degree with which you identify yourself with those lines.

There are many acceptable ways to do this job. The following check goals, while not new, will give you a refresher of ideas to make sure you are taking full advantage of the pre-selling job done by most of your suppliers.

1. Store displays should be used.



For a big volume, high profit Key Line, make sure your store says over and over that you sell this product.

2. Outside wall or parking lot signs are often very effective. Canvass your premises and discover whether or not you are advertising the *right* product lines.

3. Don't overlook awning signs. They offer good space for billboard-type advertising.

4. Window decals are excellent although only a few can be used without obstructing too much light and giving your store a messy appearance.

5. Use electric signs. They are modern. They attract attention, especially those which are animated. Many manufacturers supply them!

6. Road signs are used by many jobbers to popularize a franchise line in the area. Many suppliers

have cooperative sign programs. They should be investigated.

7. Consider the possibility of telephone directory advertising, tying in your store with highly advertised lines.

8. Delivery trucks are an excellent way to tell the public and the trade that you stock and sell specific Key Lines.

9. All of these together or separately will help to keep your store properly identified. You first have to sell your own establishment and sell it hard. Second, be positive that you have a sound Advertising Identification program with all your Key Lines. It's just plain good business to capitalize to the fullest extent on the pre-selling done by your Key Line manufacturers. In fact, this kind of an integrated program pays off handsomely in increased volume and greater profits.

signs of the times

NSPA's Comparative Performance Survey

The 1956 Edition of NSPA's annual operating ratios and cost of doing business survey for automotive wholesalers marks the twenty-fourth year that the National Standard Parts Association has provided this specialized research work for its membership.

The current report is based on 1955 operating figures supplied to NSPA's Marketing Research Committee by automotive wholesaler members from every section of the country and representing all sales volume classifications.

The 1956 report indicates that the best sales month for automotive wholesalers in 1955 was October, which accounted for 10.15 per cent of sales for the year. Sales expense amounted to 47.03 per cent of wholesalers' gross profit on merchandise and shop sales. General and administrative expense took another 32.92 per cent, and indirect expenses accounted for 7.11 per cent more. Annual stock turnover was at a rate of 3.48 times per year and represents a slight increase over 1954.

Three dollars and thirty-seven cents worth of replacement parts, equipment, tools, chemicals, refinishing materials, supplies and accessories and machine shop services were sold for every dollar of working capital automotive wholesalers had invested in their businesses in 1955 as compared to three dollars and forty cents worth reported in 1954 and three dollars and sixty-one cents worth in 1953.



W. W. HARDY of Chicago (center) receives Walker Manufacturing Company Shattuck Trophy as outstanding company District Manager for 1955, from Wayne E. Rapp, Vice President (right) in ceremony at the company's headquarters in Racine, Wisconsin. Present at the ceremony was H. Fletcher Jones of Atlanta, Georgia (left), Southeastern District Manager and two-time winner of the Shattuck Trophy.

Thirty products or product categories which contributed one-half of one per cent or more of automotive wholesalers' total volume are again included in the current report of sales by lines in 1955.

Motor and Chassis Parts, Spark Plugs, and Ignition Parts headed the list of leading lines with each category accounting for more than four per cent of reporting wholesalers' volume of sales.

MEWA Making Study

The Motor and Equipment Wholesalers Association has announced the undertaking of a study of ways and means for better coordination of its activities with local, state, and regional associations.

According to the announcement from MEWA's Chicago headquarters, the study will determine

Perfect Circle Corp. Building New Plant

Perfect Circle Corp. has begun construction of a \$1 million plant in Hagerstown, Ind., Ralph R. Teetor, company president, announced recently.

Teetor said the new structure will serve as the distribution center for Perfect Circle products. Operations to be included in the new distribution center include packaging, storage and control of finished inventories, as well as order processing, shipping and billing of piston rings and other products.

Target date for completion of the new building is next summer.



FIRST BATTERY produced by the new Delco Battery plant of General Motors' Delco-Remy Division is accepted by Mayor Hal Robinson (left) of Olathe, Kansas, from the Plant's manager John Harrison. The battery is later to be sealed in the cornerstone of a new City Hall the community plans to build.

"whether a formal tie-in between the local, state, and regional groups may be preferable to the current policy of informal cooperation."

Management Changes For Bowers Battery

Bowers Battery and Spark Plug Co. has undergone a change in management according to a recent announcement by the company.

Control of the firm and its subsidiaries has been acquired by a group headed by William A. Shea, New York City attorney; Alexander J. MacRae, former Bowers vice president, and Harry P. Noznesky, former vice president



Harry P. Noznesky

and sales manager of Price Battery Corp., of Hamburg.

Noznesky, a one-time vice president in charge of sales for Bowers, succeeds Clarence P. Bowers, founder of the firm, as president. Noznesky also will serve as general sales manager.

MacRae has been named executive vice president and general manager. The new slate of officers also includes Ingrid Y. Graul, treasurer; Charles F. Knoll, vice president, and Irvin C. Montz, assistant secretary-treasurer.

St. Louis Warehouse

The opening of the newly organized St. Louis Automotive Warehouse Company at 2839 Locust St., St. Louis, Mo., was recently announced by Herman H. Buerger, the firm's president.

Toronto Expansion

Plans for expansion of its Toronto plant have been announced by McQuay-Norris Mfg. Co., St. Louis, Mo. Building contracts have been let and construction is expected to begin immediately on an addition that will add approximately 40 per cent to the total floor space. The Toronto plant houses general sales offices, manufacturing facilities, and warehousing for the company's Canadian operations.

As a part of its expansion program, McQuay-Norris has also recently opened a new Detroit Factory Branch Warehouse to serve automotive accounts in that general area.

Sales Climbing

Sales of automotive accessory products are continuing to climb according to The Wooster Rubber Company. William F. Coulter, sales manager of the company's Automotive Division, reported

that sales for the first six months of this year were up 25 per cent over the first six months of last year.

I.A.A. to Present "Ideas Unlimited"

"Ideas Unlimited," to be presented by the Illinois Automotive Association on Friday, September 21, in the Grand Ballroom of the Midland Hotel, Chicago, is expected to draw hundreds of jobbers and their employees, warehouse distributors, manufacturers and dealers in Illinois and adjoining states.

The afternoon session will begin at 3 P. M.; buffet supper will precede the evening session which starts promptly at 7 P. M.

Speakers for the Program include noted attorney Harold Halfpenny, Washington Univ. (St. Louis) Professor of Marketing C. L. Lapp, and Battle Creek Motor Parts president Robert McNally.



ABB-NAPA CLINICS LAUNCH BRAKE EDUCATION CAMPAIGN: A crusade to make the motorist accurately aware of increasing danger on the highway has been launched by the American Brakebloc Div. of the American Brake Shoe Co. through its regular series of Brake Clinics sponsored jointly with ABB Jobbers and scheduled annually in key cities. Three such meetings were conducted recently in Hackensack, Newburgh, and Paterson, N. J. Above scene is from the Hackensack meeting. Hosts included N. P. Miller, ABB Chief Engineer; Wesley Moelter, NAPA New York Warehouse; Rod Brim, president NAPA N. Y. Warehouse; J. J. Lorenzen; Henry Harris, American Brake Shoe Co.; J. Rollins, ABB district representative; and Bob Lorenzen.

Industry Meetings

Sept. 20-22 — Automotive Parts Re-builders Association convention and Trade Show, Edgewater Beach Hotel, Chicago, Ill.

Oct. 25-26 — Automotive Wholesalers of Texas annual convention and booth conference, Statler-Hilton Hotel, Dallas, Texas.

Dec. 2-4 — Third Annual Auto Trim Show, Sherman Hotel, Chicago.

Dec. 8-16 — National Automobile Show, New Coliseum, New York.

Jan. 5-13, 1957 — Chicago Auto Show, International Amphitheatre, Chicago, Ill.

Jan. 14-18 — Annual Meeting, Society of Automotive Engineers, The Sheraton-Cadillac and Statler Hotels, Detroit, Mich.

Mar. 7-10 — Pacific Automotive Show, Civic Auditorium, Seattle, Washington.

Apr. 4-7 — Southwest Automotive Show, Automobile Bldg., Fair Park, Dallas, Texas.

Apr. 25-27 — Southeast Automotive Show, Dinner Key Auditorium, Miami, Florida.

May 9-12 — Midwest Automotive Show, Inc., Kiel Auditorium, St. Louis, Missouri.

May 13-15 — Automotive Engine Re-builders Association convention, Sheraton-Cadillac Hotel, Detroit, Mich.

May 23-26 — New England Regional Automotive Show, Inc., Boston, Mass.

License Agreement On Fuel Injection

George M. Holley, Jr., president of Holley Carburetor Co., has announced the signing of a license and engineering assistance agreement between Joseph Lucas Industries, Ltd., Birmingham, England, and Holley Carburetor, of Detroit, covering gasoline injection for automotive engines.

The agreement provides for a license to Holley Carburetor Co. in this country under all Lucas Fuel Injection patents for automotive gas engines, and the licensing of Lucas under all Holley Fuel Injection patents outside the United States.

Further provisions provide for complete exchange of engineering knowledge and data between the two companies.

New Branch in Ariz.

The Black & Decker Manufacturing Company has announced the opening of a new sales and service branch in Phoenix, Arizona. The new branch, located at 1506 Grand Avenue, will furnish complete repair and service facilities for users of the firm's portable electric tools in the Arizona area.

Barry R. Agenbroad, who worked in the Los Angeles branch, has been appointed service manager of the new Phoenix branch. Ralph L. Millie will continue as Sales Representative for the area, and will be joined by Robert J. Burway, who was formerly situated in Los Angeles. Both the Los Angeles and the Phoenix branches are under the over-all management of Robert E. Stone, Black & Decker Industrial-Automotive Division District Manager for the area.



MISS IRENE ZGLINSKY of Shenandoah, Pa., is presented with a full, four-year college scholarship by James D. Abeles, President of Purolator Products, Inc., in a special ceremony at the Purolator Ringtown plant near Shenandoah. Looking on is Miss Zglinsky's father (left) a mechanic in the salvage department at the plant. Miss Zglinsky is the first girl ever to win the Purolator scholarship which is awarded annually by the company to the child of an employee working at its Rahway, N. J., Allentown, Pa., or Ringtown, Pa., plants.



GOLD-PLATED ACHIEVEMENT — Robert Allen (left), eastern district manager of the products division of Bendix Aviation Corporation, presents a gold-plated Hydrovac power brake unit to S. G. Tilden, president of Tilden for Brakes, Brooklyn, New York. The unit, mounted on a walnut plaque, was presented to Tilden for an outstanding sales record on power brakes. Tilden for Brakes operates eleven shops, located in Brooklyn, Long Island, New Jersey and Connecticut.

Federal-Mogul-Bower Merging With NMB

Shareholders of Federal-Mogul-Bower Bearings, Inc., and National Motor Bearing Company, Inc., at separate meetings, recently approved a proposal to merge the two companies.

National Motor Bearing will be operated as the National Seal Division of Federal-Mogul-Bower Bearings, Inc.

This is the third time in three years that Federal-Mogul has increased its size and scope of operations. In December, 1953, by acquiring the Bearings Company of America, it added ball bearings to its regular line of sleeve bearings. In July, 1955, when the Bower Roller Bearing Company was merged into it, roller bearings were added. The National Motor Bearing Company brings oil seals and some other specialized products to its line.

G. S. Peppiatt, President of Federal-Mogul-Bower, said the basic organizational structure of National Motor Bearing will be maintained and its former executive vice-president and treasurer, Milton Bulkeley, will become its general manager. Lloyd A. Johnson, its former President, will stay on as a special consultant and advisor to Mr. Peppiatt.



C. A. BENOIT, Jr., president of Permatex Company, stands as he supervises the placement of a roof tree on Permatex's new building going up in Long Island, N. Y. The roof tree ceremony, a northern Europe custom, is still traditional among many L. I. builders.

Thor Begins New Branch Building

Thor Power Tool Co., Aurora, Ill., has begun construction of a modern new building to house its Indianapolis branch operation. J. A. Hill, sales vice president, has announced.

The new branch is the 25th in the company's chain of sales and service centers.

Distributors and industrial accounts in central and southern Indiana and in northwestern Kentucky, including Louisville, will be served by the new operation, Mr. Hill said.

Automotive Wholesalers' Sales and Inventories

Bureau of the Census, Department of Commerce

Per Cent Change

Region	Sales			Inventories	
	June 1956 from June 1955	June 1956 from May 1956	6 Mos. 1956 from 6 Mos. 1955	June 1956 from June 1955	June 1956 from May 1956
Middle Atlantic.....	+ 1	+ 5	+13	+ 7	+ 1
East North Central.....	+ 5	+ 3	+ 6	+ 7	- 3
West North Central.....	+11	0	+ 5	- 5	- 1
South Atlantic.....	+ 3	- 1	+ 4	+14	+ 2
East South Central.....	+ 6	+ 6	+14	+ 9	+ 2
West South Central.....	+18	- 1	+15	+14	+ 3
Mountain.....	+ 4	+ 1	+ 5	+14	0
Pacific.....	- 3	- 6	+ 3	0	0
Entire United States..	+ 5	+ 1	+ 8	+ 6	- 1

Indicators of Business Activity

These figures are based on latest thirty-day reports

	Latest Data	Month Before	Year Ago	Percentage Change from Month Ago	Percentage Change from Year Ago
PRODUCTION					
Motor Vehicles (Units).....	550,000	538,049	768,621	+ 2.2	+28.4
Industrial—F. R. B. 1947-'49=100 (Adj.).....	136	141	139	- 3.6	- 2.2
SALES					
New Cars.....	536,000	539,777	647,245	- 0.7	-17.2
Replacement Tires (Units).....	6,626,545	5,979,635	6,129,018	+10.8	+ 8.1
Manufactures (\$ Millions)					
Durable Goods.....	\$13,879	\$13,754	\$13,527	+ 0.9	+ 2.6
Non-durable Goods.....	\$13,830	\$14,042	\$13,584	- 1.5	+ 1.8
Department Stores, 1947-'49=100.....	126	124	124	+ 1.6	+ 1.6
GENERAL					
Consumers' Price Index, 1947-'49=100.....	116.2	115.4	114.4	+ 0.7	+ 1.6
Civilian Employment.....	66,655,000	66,503,000	64,994,000	+ 0.2	+ 2.6
Unemployment.....	2,833,000	2,927,000	2,471,000	- 3.2	+14.6

Motor Age's Who's Who

William C. Faust has been appointed manager of public relations for The Electric Storage



Battery Company. He will handle employee publications as well as institutional and financial public relations for the company.

Ralph N. Sather has been appointed to the position of assistant treasurer of Holley Carburetor Company.

D. C. Gibbard has been appointed sales manager of Sealed Power Corporation.

Paul C. Mortenson has joined Vickers Incorporated as chief engineer of ground mobile products.

Milton Schindler has been promoted to director of west coast sales for the Snyder Manufacturing Company.

Edward J. Fredericks has been named assistant sales manager of the automotive division of The Wooster Rubber Company.



Robert C. Carlin (photo) has been appointed sales manager of Heco Products division of Heckethorn Manufacturing & Supply Co. **John A. Hamill** has been named merchandising manager for the same company.

Elmer G. Rulf has been elected president of Eldon Manufacturing and Engineering Co. **Roger C. Loew** has become executive vice-president and treasurer, **Donald V. Foerster** is now vice-president of manufacturing and **Earl L. Meixner** has become secretary for the same company.

Arthur C. Toner, Jr., has become assistant to the director of automotive glass sales for Pittsburgh Plate Glass Company.

Paul Jones has been appointed works manager of the Borg & Beck Division of Borg-Warner Corp.

Marquand J. Anderson (photo) has been elected president of the Aro Equipment Corporation. He



succeeds Aro's founder, **John C. Markey**, who was elected chairman of the board.

John P. Buck has been named vice president in charge of manufacturing at Maremont Automotive Products, Inc. **Tom Browne** has been named plant manager of Maremont's Harvey (Illinois) plant.

William E. Baxter has been appointed midwestern carburetor field service engineer for the Rochester Products Division of General Motors Corp. **Irving W. Kallas** has been named southeastern carburetor field service engineer for the same company.

Gary F. Davis has been appointed sales manager of the Ernest Holmes Company. He will be responsible for all sales within the U. S. and throughout the world.



John P. Bank has been appointed sales engineer of the Thor Power Tool Co. **Richard E. James, Jr.**, has been named manager of the company's Indianapolis branch.

George R. Winkley has become treasurer and assistant to the president of the Speedway Manufacturing Company. **William E. Sopusek** has been appointed secretary of the company.

Cody M. Murray has been named manager of industrial relations for The Electric Storage Battery Company.

Charles E. Balz, sales manager of Burgess Battery Company, has been named vice president for sales.

R. F. Teeling has become manager of the eastern sales region of Raybestos-Manhattan, Inc. **J. T. M. Frey** has been named manager of the North Jersey district for the same company.

Thomas J. Riggs, Jr. has been elected executive vice-president and general manager of the Gabriel Company. His job will be



that of integrating and coordinating the company's manufacturing and marketing activities.

MOTOR AGE

Newscoop

Another Packard
Governors for Safety
Make Arrangements NOW!
Car Show Survivor (s)
"Hardtop"—a Misnomer
Warranty Abuses
Pacific Coast Line

S-P Prepares to Produce '57 Packard

WITH PRODUCTION NOW SCHEDULED TO START in December, Studebaker-Packard will introduce its 1957 Packard in January, according to Harold E. Churchill, president.

ANNOUNCEMENT WAS MADE following a conference with the Packard-Clipper Dealer Council which was held to discuss plans for the 1957 program. The new Packard will be produced at the South Bend facilities.

Makers Study Governors (Nonpolitical Type)

GOVERNORS TO CONTROL MAXIMUM CAR SPEED without affecting performance during acceleration are under study by automobile makers. One type would be geared to the drive shaft or transmission output shaft rather than to the engine.

IT WOULD NOT PERMIT THE ENGINE to turn up any more rpm after the preset maximum road speed is reached as indicated by drive line rpm. The study is being made to be ready with some type of governor if it should be required by law.

AM's V-4 Looks to Military

ANY PLANS AMERICAN MOTORS MAY HAVE for using its newly developed light weight air-cooled small V-4 engine in the Metropolitan will hinge on acceptance of the engine by the military as a production item.

TOOLING FOR THE ENGINE would be too costly to justify for the relatively low volume of the Metro, but if it could be combined with a sizeable military order tool costs would be manageable. Reports that the Metro will be enlarged to a full two-seater are premature.

Softer Rides in '57

IMPROVED RIDE WILL GET A LOT OF PLAY on 1957 models. Among features coming up are more torsion bars, improved valving in shocks, a cushioning device involving air bags and conventional shocks, a full air suspension, and new frame designs.

Make Car Show Arrangements Now!!

CAR DEALERS AND OTHERS EXPECTING TO ATTEND the National Auto Show in New York in December should get travel and hotel reservations right now. Airlines already are organizing excursions from various cities and with heavy holiday travel starting in early December.

THE BEST WAY TO ASSURE TRANSPORTATION is to act immediately. Hotel space also will be tight and prompt action on accommodations may avoid disappointment.

The Survivor(s)

ONLY TWO NAMES OF CARS that were shown in the 1900 national automobile show will still be in evidence at the 1956 National Show in December, provided that Packard participates.

PACKARD AND RAMBLER are the only two names that have survived from the original 40 makes listed at the first show. And Rambler was among the missing from 1914 until 1950 when it was resurrected by American Motors (Nash) for its present line of compact cars.

Atom Cars Impractical as Yet

MANY YEARS MAY GO BY before atomic-powered cars or trucks come into your place of business for servicing. That's the forecast of a citizens' group named by Congress to study peaceful uses of the atom.

ONE GREAT DIFFICULTY, the group says, is to get an atomic engine and its protective shielding down to usable weight. Also, the cost of even the smallest atomic engine would be far more than customers would agree to pay.

Changeover and Production

AUTOMOBILE PRODUCTION THIS MONTH will probably plug along at about the same pace as in August. Not much appreciable change is expected in the production picture until October, when most car makers will be back in swing on 1957 models.

OUTPUT LAST MONTH WAS ESTIMATED in the neighborhood of 400,000 units. While most of the Chrysler and Ford divisions already are in full production on 1957 models, General Motors divisions are just beginning to go into their changeover periods.

A Misnomer May Become a Fact

HARDTOP CONVERTIBLES, NOW A MISNOMER, may become just that before another year. At least two car makers have developed models in which the steel top actually retracts.

THE FORWARD SECTION TELESCOPES into the rear part and the whole assembly retracts into a well in the trunk. They may be ready for production sometime during the 1957 model years.

Warranty Abuses Turn Up

CAR MAKERS ARE CONCERNED about dealer abuses of the 100 per cent warranty labor recovery policy instituted this year. One made a spot check in several cities by requiring all parts replaced to be turned back.

IT FOUND THAT OF 17 of a certain part returned as faulty, 15 were perfect, the remaining two doubtful. Other findings: poor diagnosis, parts returned were not of company origin, packing of labor charges.

COST OF FULL REIMBURSEMENT is proving so high, it may affect new car prices. If abuses get out of hand, factories may well institute much more severe forms of control on paying warranty claims.

Smaller Wheel Won't Be Universal in '57

14-INCH WHEELS WILL NOT BE USED on all makes of 1957 cars. In general lower and medium priced makes will carry the smaller diameters although some of the more expensive lines also will be on the smaller wheels.

Pacific Coast Line.....by Nate Shanedling

Proper Pricing Urged

LEADERS OF RETAILING GROUPS in California are urging their membership to closely analyze their costs before quoting prices on maintenance and repair work.

THE PLAINT IS "Too many members of our industry do not realize their cost of doing business and, as a result, a pattern is being set that is hard to break down."

THEY POINT TO INCREASED WAGES, cost of equipment, taxes and other features that are included in general overhead, and urge members of the automotive service industry to charge a fair price according to their investment and the labor involved.

Licensed Service Specialists in California

CLAIMING THAT LICENSING service specialists is an important one in the campaigns against traffic accidents, leading retailers in the industry are urging the appointment of an "Automotive Board of Review" that would give written and oral tests to determine the capabilities of anyone making his livelihood as a service specialist.

THE BACKERS OF THIS PROGRAM point out that countless persons in various other services are required to be licensed, but a service specialist has no definite requirements and can perform inferior work with disastrous results.

Washington Wireby Ray M. Stroupe



2 Million Trips Down the Lane to Safety

RESULTS OF THE 1956 NATIONAL VEHICLE SAFETY CHECK show the need for more frequent rear light, front light, and brake service. Of 463,000 cars and trucks found with some defect, nearly 279,000 had light or brake trouble.

SAFETY CHECK LANES WERE SET UP in 800 city and 95 county programs in 34 states in May and June. Checkers examined more than 2.1 million cars and trucks, or half again as many as in 1955.

How Do You Feel About Credit Controls?

MEMBERS ARE URGED by the National Automobile Dealers Association to use a new opportunity to tell the government how they feel about standby credit controls. Some dealers will be contacted by mail in the current Federal Reserve Board study of consumer credit.

THEY WILL BE ABLE TO OFFER their views in confidence on the forms they receive. No one is required to give details as to how his dealership works.

New Tax Forms for Dealers

DEALERS SELLING GASOLINE AND TIRES should obtain new tax forms from the Internal Revenue Service for making tax returns on floor stocks on hand as of July 1st. This is the date the new excise taxes went into effect to pay for the road program.

THE HIGHWAY LAW ADDS ONE CENT to the tax on gasoline and diesel fuel. Tires went up 5 to 8 cents per pound and retread rubber got a new tax of 3 cents per pound imposed on it. Dealer stocks on hand must be reported by October 15 on IRS form 2265.

Subcommittee on Accidents

HEARINGS IN DAYTON AND INDIANAPOLIS late in September are planned by the House (Roberts) subcommittee studying causes of traffic accidents. After those trips the group may suspend its meetings until after the November elections.

VISITS TO AUTOMOBILE PLANTS featured the subcommittee work in August. Staff assistants in Washington are receiving and reviewing material on accident control at state and local levels.

Prepaying Taxes Made Possible

DISTRICT DIRECTORS OF INTERNAL REVENUE have the facts about a plan that is to save businessmen some of the hours they now spend on paperwork. It permits them to prepay federal retail excise taxes when they buy merchandise, rather than when they sell it.

THE AMOUNT OF TAX THE RETAILER WILL PAY is figured on current resale prices of the goods. Refunds for price cuts may be claimed on future prepayments.

Where to Locate a Small Business

TAKE A READING ON THE LOCATION YOU'RE IN, the Small Business Administration advises service center and retail store owners. Are you located where customers can reach you easily, parking areas are plentiful, and your costs can be kept in check?

FOR BUSINESSMEN WHO ARE LOOKING MORE CLOSELY at their operating sites, SBA has a new leaflet, "Sizing Up Small Business Locations." You can get it at SBA field offices.

SS Tax Goes Up January 1st

BUSINESS OPERATORS AND THEIR EMPLOYEES must pay a higher social security tax beginning next January 1. New law raises the tax on both employer and worker by $\frac{1}{4}$ of 1 percent of the first \$4,200 of employee earnings, or a maximum of \$10.50 a year.

SELF-EMPLOYED PERSONS ARE TO PAY $\frac{1}{4}$ of 1 percent more than they are paying now. Most retail groups dislike the new tax law, holding that the system is still not pay-as-you-go.

Buyers Don't Shy at Large Car Debts

INSTALMENT DEBT OF \$2,000 or more on a new car doesn't frighten many U. S. car buyers, a recent Federal Reserve Board survey points out. Nearly half the families contacted said their original car debt was in that range.

BUYERS OF USED CARS on credit generally take on less of a financial burden. About 75 percent of the families with used cars reported an original debt of less than \$1,000.

Report to Our Readers



Food for Thought

THE following appeared some time ago in the Illinois Auto Trade Bulletin and, we believe, it contains a carload of food for thought.

Recently, a special "doctored-up" car made a total of 83 stops for minor services, the driver explaining that he was leaving on a vacation and the car should have a final check-up.

The two front tires were almost beyond the retreading stage. The fan belt was badly worn and needed replacing. There was no windshield wiper on the driver's side. The door jamb sticker showed the car had not been lubricated or the oil changed for three months. Before every stop the oil was drained so it was 2 quarts low and tire blacking compound added to make it look ready for a change. Total cost of obvious things that could be easily seen was \$150.86.

But Here's What Happened:

Eighty wiped the windshield but only seven noticed the missing wiper blade. Only nine men called attention to the battered fan belt. Of the 83, only five bothered to look at the door jamb sticker and only three suggested an oil change and just one tried to sell a lubrication.

If each of the 83 places visited had sold all the service that was obviously needed, sales would have totaled \$12,372.52. Actually only \$278.40 worth of service was sold, less than three per cent.

A sad situation, you say—but the surprising thing is that it's happening every day, and possibly in your own shop. To sell anyone, you have to tell them what they need and why they need it. If you stop and consider a moment, you'll probably agree with "selling by telling." How many times, for example, have you yourself bought something because someone took time out to call it to your attention?

Be sure your service salesmen are alert to these additional service sales. It means extra profits for your shop and you're actually doing

your customer a favor by pointing out those defective items on his car that may cause him trouble or a serious accident later.

Biting Its Own Tail

The Fort Wayne, Ind., Better Business Bureau describes the vicious circle of deceptive advertising:

When advertising grows unbelievable, someone stops buying.

When someone stops buying, someone stops selling.

When someone stops selling, someone stops making.

When someone stops making, someone stops earning.

When someone stops earning, someone stops buying.

Rush, Rush, Rush!

THE following first saw the light of day in a printer's office yet how true it is in most every shop and service department:

I am a RUSH job!

I belong to no age, for men have always hurried.
I prod all human endeavor.

Men believe me necessary—but falsely.

I rush today because I was not planned yesterday.

I demand excessive energy and concentration.

I override obstacles, but at great expense.

I illustrate the old saying—"Haste makes waste."

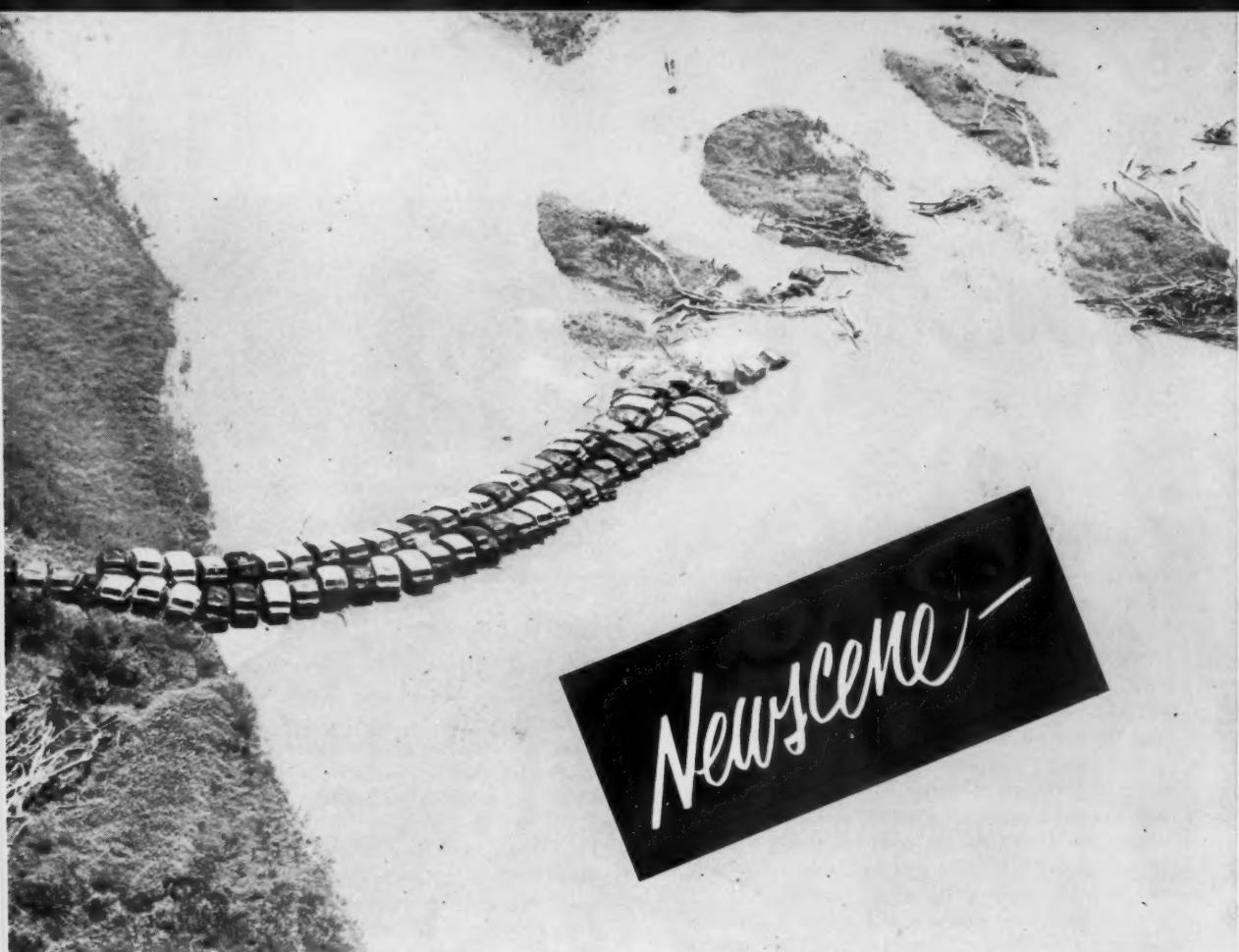
My path is strewn with the costs of overtime,
mistakes and disappointments.

Accuracy and quality give way to speed.

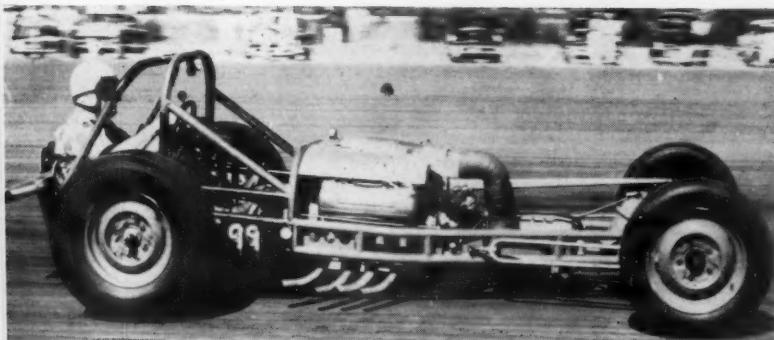
Ruthlessly I rush on . . . I am a RUSH job!

Faithfully yours,

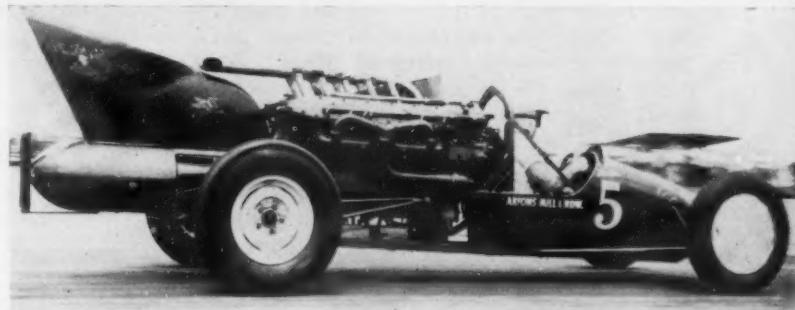
EDITOR



Newscene



▲ "SLINGSHOT" (above), a suspension dragster that was entered in the National Championship drag races at Kansas City, Missouri, over the Labor Day weekend places the driver behind the rear wheels. The engine is in the center, with a supercharger occupying the engine's former location. At the wheel is Paul Wellborn of Portland, Oregon. Another entry (right) was this aircraft-engine powered dragster with a large fin over a torpedo-like tail.



▲ LADY BUGS DOING CLOSE-ORDER DRILL? No, this is an aerial view of old automobile bodies which have been used to build a jettty designed to divert the current of the Kaw River near Willard, Kansas, away from the north bank. The double row of cars is anchored to an island near the middle of the channel. The jettty serves as part of flood preventative methods which have been instituted by a three-county drainage board.



▲ **SUMMER UNIFORM.** Out in Wisconsin, when temperatures reach 90 plus, drastic measures are sometimes taken to be comfortable on the job. This service station attendant has given up his customary uniform and greets his customers in much more tolerable swimming trunks. One of the many sympathetic customers appears to be thinking, "Go Thou, and Do Likewise," as he prepares to pay his gasoline bill. We'll bet the customer did, too.

▼ **WANTED: TWO SPORTS.**

This unusual car with the wide stubby front is the "Fiat 600" with a special body called "Spiaggia" (Beach) created by Pinin Farina, of Turin, Italy. It is designed for those who want a special type of vehicle for hunting parties, camping trips or the beach. The two señoritas are waiting for a couple of sports to take them for a couple of sports to take them for a turn around the beach.



▲ **THE NEW CHAMP!!** Winner of the 19th All-American Soap Box Derby, Norman Westfall, 14, of Rochester, New York, hugs his trophy presented by E. N. Cole, general manager of the Chevrolet Motor Division of General Motors, Inc. Proudly looking on are (from left) Norman's mother, Mrs. Robert Westfall and his two brothers, Richard, 6, and Robert, 10. Norman was the second All-American champ from the mighty proud city of Rochester.



Cover Contest For September

AS announced last month the August cover painting was not offered as a contest award but will be delivered to the employees and management of Bushong Pontiac in Upper Darby, Pa. The founder of this dealership, the late Morton E. Bushong, was the inspiration behind the August cover painting as he was a strong sponsor of Sunday Closing and kept a sign posted in his show room advising his customers and the public at large that he and his people were members of the community and that they, too, "needed Sunday for rest, relaxation and meditation."

With the publication of the September issue of MOTOR AGE, however, the monthly Cover Contests resume.

To enter the September, 1956, Cover Contest, simply write a letter on your business stationery telling the editors of MOTOR AGE what you liked best about the September (1956) issue. Then sign your name and title. The writer of the letter judged best by the Cover Contest judges will receive, handsomely framed and mounted, the artist's original painting for the September MOTOR AGE cover.

No Entry Fee

There is no entry fee whatsoever. The September (1956) Cover Contest is opened to all subscribers of MOTOR AGE (excepting employees of the Chilton Company, publishers of this magazine).

Send your letter to: MOTOR AGE Cover Contest Editor, The Chilton Company, 56th & Chestnut Sts., Philadelphia 39, Pa. All letters received become the property of the Chilton Company and none can be returned. The deadline for the September (1956) Cover Con-



HAROLD E. CHURCHILL (left), new president of Studebaker-Packard Corporation, gave his engineers and sales planners the order to move ahead rapidly on 1957 and 1958 car development plans, following a conference last month with Roy T. Hurley, chairman and president, Curtiss-Wright Corporation. The meeting in South Bend, Ind., was the first since the agreement was signed August 6 between the two companies bringing the pioneer auto firm \$35 million in new financial resources. The officials said that first details of the corporation's "new and different approach" to auto production and marketing will be disclosed at dealer meetings this month.

test will be Monday, October 15, 1956. Letters must be postmarked on or before midnight of this date to be eligible for the September contest.

June Winner from Colorado

Winner of the June Cover Contest was Paul A. Smith, Parts Manager for E. M. Hollister Motor Company, 1127 Walnut St., Boulder, Colo. Congratulations Mr. Smith!

Wrote Mr. Smith:

"Needless to say your article continuing the servicing on the Torque-Flight transmission was of great interest in general to those of us who are directly responsible to saving as much time and money as is possible for our customers. I have read your articles in each and every magazine regardless of make of car as we always seem to have other makes

as well as our own Chryslers and Plymouths.

"Perhaps the most interesting to me is the "Merchandising Forum" of which I can gain the many words of wisdom of others and profit by their experiences. I am still a student at the University of Colorado night school with my goal as Sales Engineering and certainly these articles fit right in with my job as the parts manager. I know I can count on such writings to be correct and aid not only myself but certainly those people I work for.

"I personally feel that your magazine in general gives undivided attention to all those that subscribe and advertise therein.

"May I say in general that your magazine is well planned, well edited, and chock full of useful information."

New Specifications For "500" Classic

With an adequate supply of the necessary new engine parts assured for all car owners in time for next year's 500-mile race, Speedway President Tony Hulman has recently announced a cut in the piston displacement for the 1957 Classic.

The new specifications, which also will remain in effect for the 1958 and 1959 Indianapolis races, reduce the maximum size of non-supercharged engines from 274 cubic inches (4,500 cc) to 256 cubic inches (4,200 cc) and cut super-charged engines from 183 cubic inches (3,000 cc) to 171 cubic inches (2,800 cc).

Diesel engines up to a maximum displacement of 335 cubic inches (5,500 cc) and turbine engines of unlimited size will be eligible again in 1957, as in 1956.

The Speedway management decided to make this change "if it could be accomplished without the risk of a shortage of new engine parts," said Hulman. "Official announcement was withheld until such assurance could be obtained from the companies which make

the cylinder blocks, crankshafts and pistons for most racing engines.

Parts Shortage Unlikely

"We have been promised that no shortage of this kind is likely to materialize," Hulman continued, "And the change in specifications now is official.

"From the standpoint of safety, we believe the use of smaller engines will serve as a check on the steadily increasing rate of speed attained in recent years; and the change in piston displacement is a step toward possible agreement with the Federation Internationale de l'Automobile on standard engine sizes for all championship events throughout the world beginning in 1960. I'm sure everyone will welcome additional International competition."

Engines up to 600 cubic inches were permitted for the first 500-mile race in 1911. This figure was cut to 450 in 1913, 300 in 1915, 183 in 1920, 122 in 1923 and 91.5 in 1926. For eight straight races, beginning in 1930, the Indianapolis Classic was open to engines up to 366 inches; but the "unblown 274" and "blown 183" rules have prevailed since 1938.

J. Albert Laansma



J. ALBERT LAANSMA, Detroit regional advertising manager for MOTOR AGE and former editor of *Motor World Wholesale*, died August 8, at the age of 54.

Widely known in many segments of the automotive service industry, Al Laansma was born in Grand Rapids. He graduated from the University of Mich. in 1925.

In 1930 he joined the Motor and Equipment Manufacturers Assn. as public relations director. In 1935 he became affiliated with the Chilton Company as managing editor of *Motor World Wholesale*. A year later he was made editor.

In 1937 he was transferred to Detroit as advertising representative for MOTOR AGE.

Al Laansma was held in high esteem by scores of business associates and we believe Albert H. Eichholz, general manager of M.E.M.A., has expressed the feeling of many. The following is Mr. Eichholz' tribute to Al Laansma:

"We admired his many splendid qualities. He was naturally a thorough gentleman, came from fine home background, was intelligently capable, ever considerate of others, had an appealing personality, mixed easily with others, revealed excellent diplomatic tact. . . . In fact, I never knew anyone who disliked him."

1956 RETAIL CAR SALES PRICE GROUPS*

Number of Cars

Price Group	June		Six Months	
	1956	% of Total	1955	% of Total
Under \$2,000	102,881	19.38	375,572	56.10
\$2,001 to \$2,500	283,593	53.42	210,052	31.04
\$2,501 to \$3,500	123,876	23.33	69,447	10.26
Over \$3,500	20,556	3.87	17,565	2.60
Total	530,888	100.00	876,636	100.00
	3,047,042		100.00	
	3,525,392		100.00	

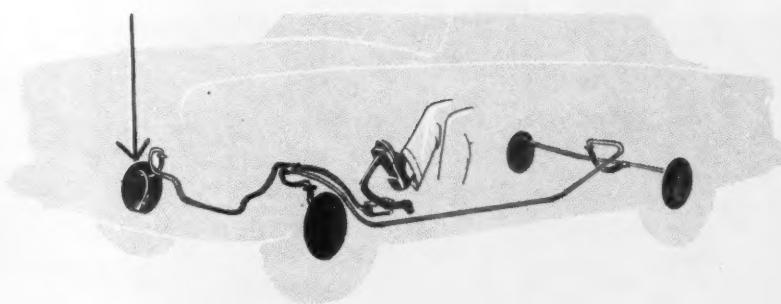
Dollar Volume of Sales

Price Group	June		Six Months	
	1956	% of Total	1955	% of Total
Under \$2,000	\$ 202,264,131	16.34	\$ 719,814,514	48.77
\$2,001 to \$2,500	608,255,746	49.12	490,036,605	33.20
\$2,501 to \$3,500	338,906,853	27.37	185,158,548	13.22
Over \$3,500	88,770,915	7.17	70,937,593	4.81
Total	\$1,238,197,644	100.00	\$1,475,957,260	100.00
	\$7,130,340,288		100.00	
	\$7,775,827,401		100.00	

*Calculated on basis of new car registrations, as reported by R. L. Polk & Co., in conjunction with advertised delivered price at factory of four door sedan or equivalent model. Does not include transportation charges or extra equipment.

†New registrations of American-made cars only. Does not include imported foreign cars.

For
Safety's
Sake



Know Your Brake System

Brake failures can be prevented if service specialists use top quality material and workmanship. You owe it to your customers

by Jack Montgomery, Technical Editor

NORMALLY the Service Specialist experiences little difficulty in installing a new set of brake shoes. In the servicing and adjusting, however, of the complete brake system, problems do arise that may require involved correction. Here is presented a round-up of possible difficulties in servicing the brake system along with the necessary remedies.

Before starting on a brake job, it is a good idea to take time out to give the car a short road-test—provided of course the brakes have some stopping ability.

The road test often shows up a condition that would not likely be discovered during the relining process. For example, grabbing, failure of the brakes to release fully, fading of the pedal and other faults may all show up on a road test. It is much easier to correct them during the course of the brake job than afterwards.

If Pedal Is Soft or Spongy

If the brake pedal seems soft or spongy, watch for improperly adjusted brake shoe anchors, a rough primary cup, a leaking check valve in the master cylinder, soft brake hoses which expand under pressure, or master cylinder which is loose on its mounting. If, when the pedal is applied,

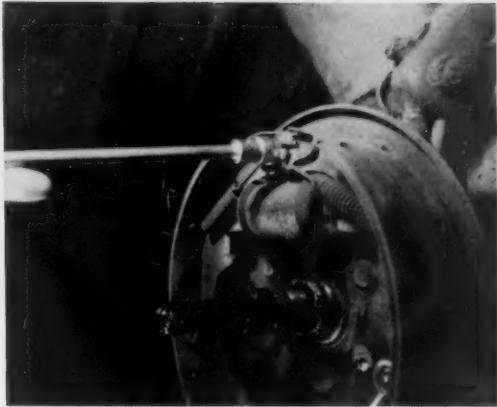
it feels low but builds up after a couple of applications watch for a leaking check valve in the master cylinder, the pedal push-rod adjusted too loose, or swollen or grooved master cylinder primary cup.

Brakes Pulling to One Side

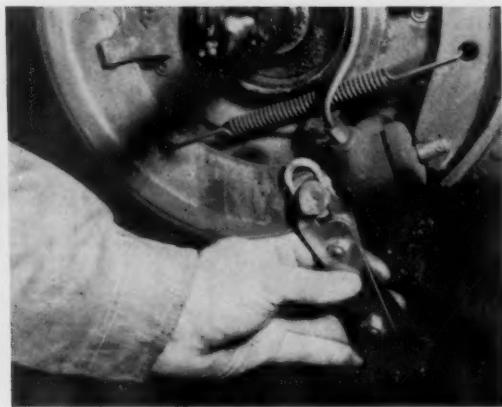
If the brakes pull to one side, watch for clogged brake hoses on the side opposite to the direction to which it pulls, broken or weak shoe return springs, loose backing plates or drums out-of-round. This can also be caused by defective wheel cylinders on the side opposite to the direction in which the car pulls. If the brakes fade or do not hold when hot, it may be due to thin brake drums which expand under heat, expanded wheel cylinder cups, or brake lines which are too close to the exhaust system, causing the fluid to boil.

If the brake pedal builds up while driving, the master cylinder rod may be improperly adjusted, the primary cup may be swollen, thus closing off the by-pass hole in the master cylinder. It might even be caused by the brake line or master cylinder being too close to the exhaust system. In this case, the brake fluid may be

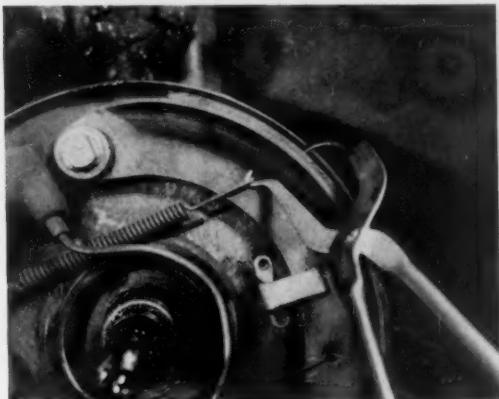
(Continued on page 130)



The proper tool is shown being used to remove the brake pull-back spring in the right front spindle.



Special pliers, like these, are available for removing anchor pin locks in the brake assembly.



Another set of special pliers are used for removing and replacing brake shoe pull-back springs.

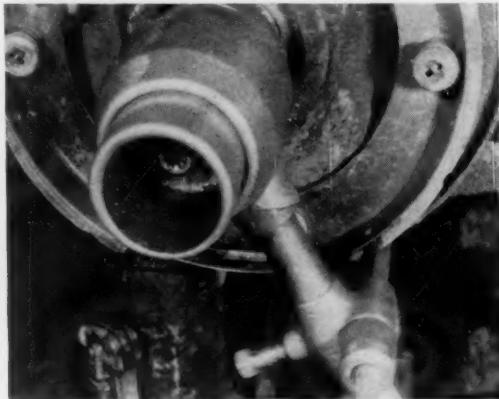


Minor adjustments are made by adjusting the eccentric cams on the inside of the backing plate.

This special gage is used to get the proper diameter to set up the anchor adjustment gage (next).



Readings from the drum gage are used on this gage to check anchor adjustments and lining contact.



How to do it . . .

Forming an IGO Chapter

**Helpful information and step-by-step procedures to observe
when setting up a local chapter of IGO in your community**

**By Ralph James, Executive Director
Independent Garage Owners of America**

THREE are many requests today for information on how to start a local or state association as well as how to federate with the "Independent Garage Owners of America." It is my hope that this article may be of assistance in making these steps clear.

Where a local garagemen's association is desired, the first step is to call several of the progressive independent garage owners together, for the purpose of discussing and understanding what advantages you might expect to receive from association development. Here are a few things an association can bring about:

Exchange Beneficial Ideas

1. You will know others in your industry, with whom you can exchange ideas of mutual benefit.
2. You will discover that there are many reasons why you should cooperate with others in your industry in a united effort to compete ethically.
3. You can unite to elevate your industry and develop educational programs. You can elevate your industry in the eyes of your customer, by cooperating collectively in a public relations program.



**At left: article's author Ralph James.
Above: scene from
first annual IGO
meeting in Wichita.**

4. You can have one central point through which information can be collected and passed on to all members.

5. Your voice can be heard, effectively, only through association. In this way you can successfully sponsor or oppose legislation.

Discuss IGO Background

At this preliminary get-together it might be well to discuss something of the recent history of IGO. Briefly, here is the background:

At Joplin, Mo., on June 20, 1954, at a meeting



At the first annual meeting of Independent Garage Owners of America, election of officers for the coming year was high on the agenda. Above, officers chosen at this meeting gather around the IGO shield. From left to right: Robert Chase, secretary-treasurer; Ernie Welborn, 1st vice president; Howard Eves, president; Paul Wilson, 2nd vice president; and John Brenneman, 3rd vice president of IGO.

of independent garagemen—representing associations from Arkansas, Missouri, Kansas, and Oklahoma, the National organization was conceived. Preliminary plans were developed at a subsequent meeting in Tulsa, Oklahoma, on July 25th of the same year. At this time, delegates from California and Texas joined the delegates from the four states already mentioned.

The aims of the organization were to unite the independent automotive repair operator and affiliates in a nationwide association and to promote among its members a closer business, educational and social unity, to protect the member's interest, to encourage highest standards of ethics, and to foster harmonious relations with the motoring public.

Improve Repair Standards

Equally important aims adopted as the purpose of the organization were to improve the standards of automotive repairs, to assist in the organization of local and state units for affiliation with IGO-America, and to investigate pending legislation on automotive affairs as well as to advocate legislation in keeping with the best interests of the automotive industry and motoring public.

In Oklahoma City, January 14-16, 1955, forty-four delegates from those six states and Ala-

bama, Louisiana, Massachusetts, Michigan, and Ohio (11 in all) representing local and state associations met to complete organizational plans. At this meeting the association was named, officers elected, the Constitution and By-Laws were drawn up and Executive Director appointed.

Who Can Belong?

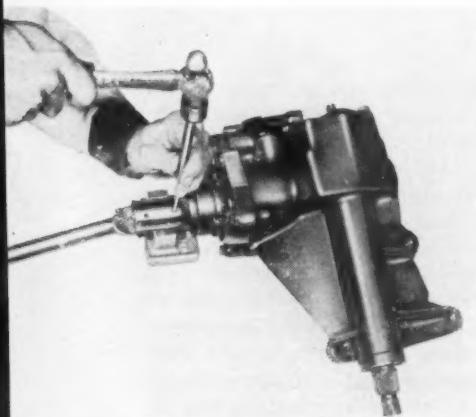
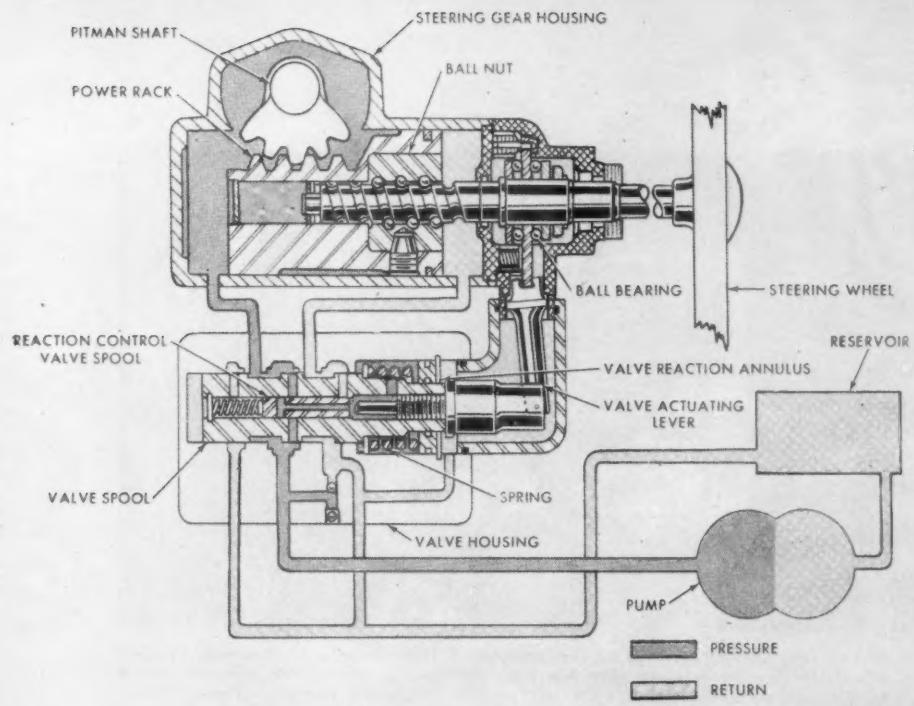
The Independent Garage Owners of America is an organization of Independent Garagemen, owners, and operators of body, paint, and trim shops, engine rebuilders, radiator shops, brake and wheel alignment service, general repair shops, and/or specialized repair shops of motor vehicles.

In the sixteen months since the official beginning of IGOA we now have members in sixteen states. Thirty-five independent manufacturers of automotive replacement parts are actively supporting us as Allied Members.

There are several more organized associations of independent garagemen in additional states who have written for information with regard to their affiliating as a member of IGOA. It is expected that three of these states will be in a position to do so and will apply for membership in the near future.

But getting back to your own preliminary

(Continued on page 112)



Driving out roll pin disconnects steering drive shaft at coupling.

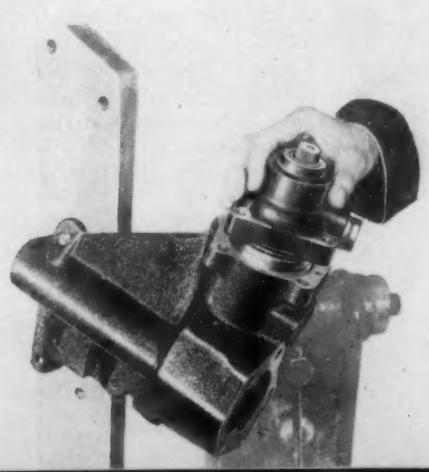
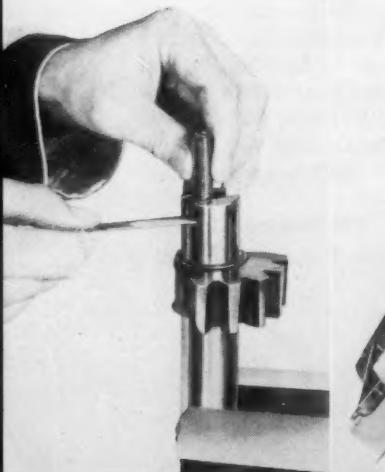
Below: measuring the end-play at the Pitman shaft adjusting screw.

Removing the Pitman arm and cover can be performed with unit on car.

With unit on work bench the upper thrust bearing cover is taken off.

POWER steering, like other functional parts of the car, requires periodic inspection and servicing. Below are outlined servicing, lubricating, and trouble shooting procedures for the Saginaw In-Line power steering unit.

The gear box of this unit should be checked every 1000 miles and filled with SAE 90 fluid gear oil. The oil pump level should be checked every 1000 miles also. Add type A fluid to bring up to proper level. Before checking, make sure to wipe the cover of the reservoir clean so that no dirt would be likely to fall into the reservoir. Remove the cover and check the oil level. Level



Trouble Shooting

Saginaw In-Line Power Steering

An outline of servicing procedures for this popular steering system that was introduced in '56 on Buick, Cadillac, Lincoln, Oldsmobile, and Pontiac models

should be at the line stamped into the metal of the reservoir.

Oil should be changed at 25,000 mile intervals.

Disconnecting Hoses

The hose used to carry pressure from the pump to the power steering unit is in most cases smaller in diameter than the hose used to return the fluid from the unit to the pump. In the majority of cases these hoses are equipped with fittings which can be connected to the right spot. Caution: It has been found in some cases, that the fittings of the two hoses are

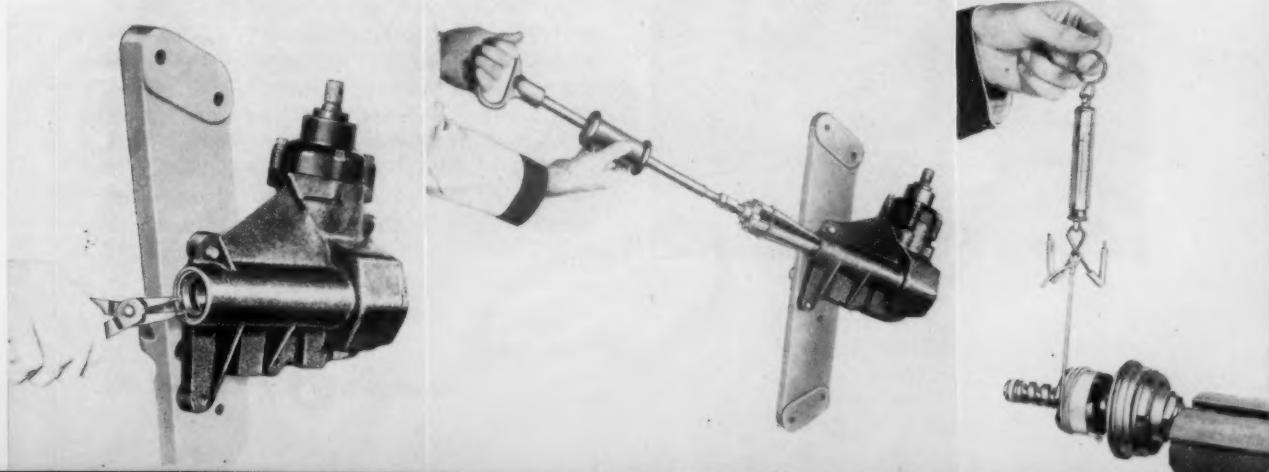
identical. For this reason it is recommended that the fittings of all power steering hoses be match marked before disconnecting the hoses. If this precaution is not taken and the hoses are crossed, pressure will enter the return line of the unit which will result in the seals being forced out of position, causing an oil leak and a poor working unit.

Clean the fittings which attaches the pressure hose to the control valve assembly and disconnect the hose. Let the oil drain from the hose into a pan. Start the engine and let it idle.

(Continued on page 74)

Special pliers used to remove Pitman shaft oil seal retaining ring.

An inertia-type puller is used for pulling the Pitman shaft oil seal. Mechanic is checking the ball nut pre-load by means of spring scale.





Vehicle Checks Bring Safe Results

Some communities got awards, others got just a sense of well being, but all combined to make the nation's highways much, much safer

A model of award winning New Bern-Craven County's check lane (top of page) was used to brief check lane workers on procedures before the program got under way. The Board of Judges for the National program (below) here select award winners.



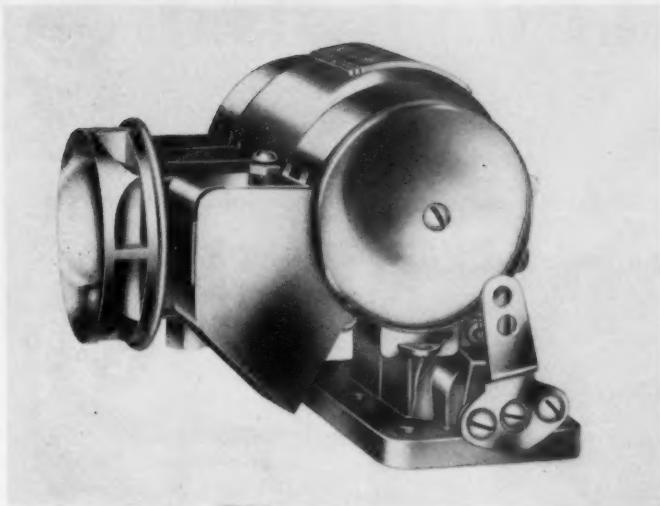
NEARLY 2,200,000 cars and trucks were voluntarily checked for safe operation during the 1956 National Vehicle Safety-Check program. ONE out of every FIVE vehicles checked for safe operating condition was in need of maintenance attention to one or more parts. Of the ten items safety-checked, rear lights, brakes and front lights stood out as parts most frequently in need of immediate service attention. (See table at end of this article.)

Vehicle Safety-Check is sponsored by the Inter-Industry Committee, LOOK magazine, and the National Safety Council, with the co-operation of the National Conference of State Coordinators.

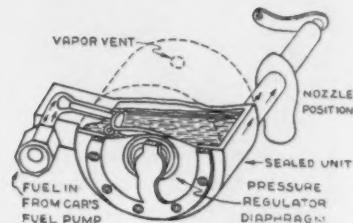
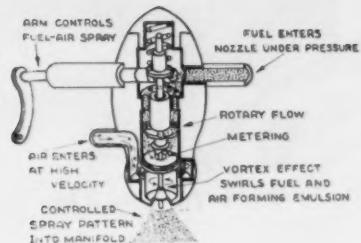
Fifty-three cities and twelve counties were cited on July 20 for outstanding support of the 1956 program. These award-winning programs accounted for the safety-checking of 659,433 of all vehicles checked in the nation. Grand award winners were New Bern-Craven County, North Carolina, and Gastonia, North Carolina. National Awards of Excellence for their population groups went to: Great Bend, Kansas; Gary, Indiana; Gates County, North

(Continued on page 180)

The Meteor Fuel Injector



This is the Model 200 Meteor fuel injector unit which can replace two or four barrel carburetors.



Top drawing shows nozzle operation of the unit. Bottom drawing shows factory-sealed fuel section.

Considered a step in the direction of direct fuel injection for cars, this low pressure injection system is currently being used in aircraft

THREE has been some interest generated in recent months concerning pressurized carburetors for passenger car engines. This development is thought of by some engineers as perhaps the logical step-up on the way from conventional carburetors to direct fuel injection.

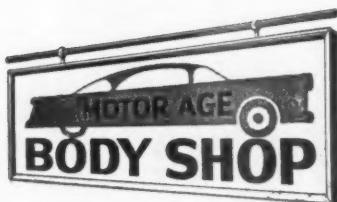
Currently, there is one such unit—the Meteor Fuel Injector—in production. Designed and produced by Saaty Fuel Injector Corp. in Providence, R. I., the unit is interchangeable with present-day carburetors. It injects fuel into the intake manifold under slight pressure instead of depending upon engine vacuum. This system,

referred to as manifold injection or low pressure injection, has been used for some time in aircraft engines.

Pre-Mixes Gasoline and Air

The Saaty Meteor unit pre-mixes the gasoline and air within its nozzle, forming an emulsion which is then sprayed into the air entering the manifold in a controlled spray pattern. Injection of the fuel takes place in a stream of air traveling at high velocity, at a point at which a vortex effect causes a swirling motion providing

(Continued on page 84)



QUICK *Body Repairs with* EPOXY RESIN

There is a big demand for low-cost, hurry-up body jobs. With very little investment you can corner a sizeable slice of this business

PATCHING metal panels with epoxy resins and fiber glass continues to grow in practice throughout the industry. This is especially true where repair of older model cars and restyling jobs are involved.

The greatest single reason for this popularity is the time and labor savings realized by the shop and the customer when this method is employed. The second factor is that a shop needs only to purchase an epoxy resin repair kit to set itself up in this type of work. One "shop size" kit costs about \$25 and will handle several jobs of the size illustrated. The only other tools needed are: a flat, shallow pan, rubber gloves, disc sander with medium or

Dents of this type can be repaired with resin and fiber glass without removing the inside panels.

By R. C. Rittenhouse,
Associate Editor

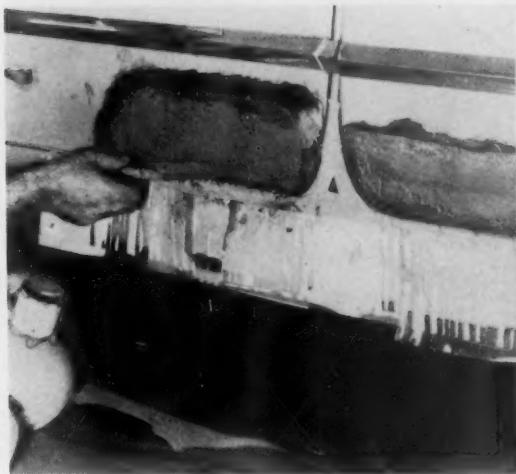
coarse disc, body file, hammer, scissors, $\frac{1}{4}$ inch drill, putty knife and a heat lamp or two. Materials that may not be found in the kit, but which will be helpful are: a hydrocarbon solvent, cellophane or waxed paper, masking tape, and scissors.

Preparation of the Surface

To properly prepare the surface, remove all paint and rust scale. Apply a hydrocarbon type solvent over the working area with a clean rag.

Final patch of the layup is applied to the damaged area. Overlap the damage by at least four inches.





Pits and indentations can be filled at this point with epoxy metal solder to build a final contour.



Heat lamps can be used to speed the curing process. Place lamps at least ten inches from the repair.

Then wipe dry. Next, prepare the damaged area and up to eight inches beyond with a No. 16 open coat sanding disc. This insures a good bond between metal and resin. To provide a maximum surface for adhesion, dent the damaged area to a long, gradual slope. In some cases, bonding will not be complete even after denting. A few holes drilled around the damage will provide an anchoring point for the materials.

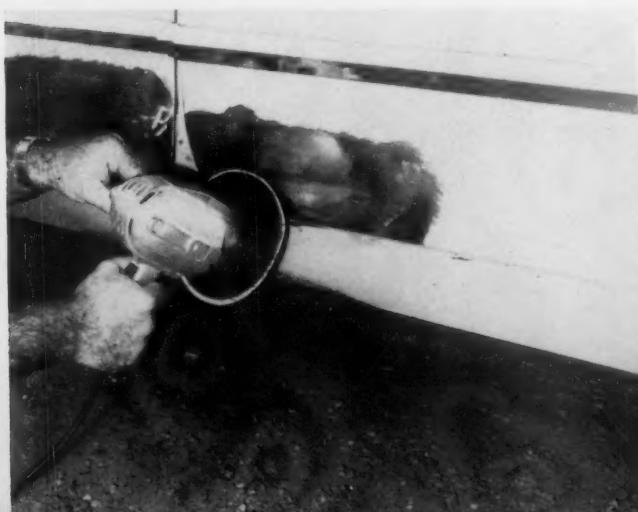
(Continued on page 108)

When cure is completed, sand with a disc sander and bring to a final contour with a body file.



A typical epoxy resin and fiber glass kit costing about \$25.

After refinishing, the repaired panels look as good as new. Cost: materials—less than \$5, time—2 hrs.



Motor Age Shop Clinic Quiz



1. In most cases the hose used to carry pressure from the pump to the power steering unit is (smaller; larger; the same size) than (as) the hose used to return the fluid from the unit to the pump.

2. In connecting up dis-assembled power steering hoses, what may well happen if hoses are inadvertently cross-connected?

3. In correcting "hard steering" one of the tests is to disconnect the linkage at the Pitman arm and check the pull required to pull steering wheel through the midpoint, straight-ahead position. If the spring scale reads beyond the 1 and $\frac{3}{4}$ pounds indicator, what, if any, is the suggested procedure for remedying the "hard steering"?

4. If steering is slow due to binding of the control valve because of the assembly being mounted improperly, loosen the screw holding valve assembly to the gear. This permits the valve (to center itself; to be reached with the proper tool for necessary adjustment).

5. Hard steering when parking can be due to a number of reasons. For example, tight adjustment of the Pitman arm, the pre-load on the ball nut or the upper

thrust bearing may be too great. Name at least three more additional possibilities.

6. Steering wheel surges or jerks are likely due to a loose pump belt. Check by depressing the belt in the center. It should deflect no more than ($\frac{1}{8}$; $\frac{1}{4}$; $\frac{1}{2}$ inch) under a five to seven pound force.

True or False

7. When bleeding the system of air that entered because of low fluid level in the reservoir, the following are the major steps to follow: Loosen the bleed screw on the Pitman shaft end cover, start the engine and turn steering wheel several times. The trapped air will escape past the bleed screw. When no more air escapes, re-tighten the bleed screw and fill up the reservoir (which was low to begin with) to proper level.

8. While the funnulating lever is accessible when the valve assembly has been removed, the pre-load on the ball nut or the upper worm thrust bearing may be too great. If this be the case, the gear must be removed and dis-assembled to check and correct the condition.

9. When checking the pump

An absorbing and easy-to-do

Quiz of ten questions based

on the article on pages 46, 47

operation of the power steering unit, connect a 1,000 lb psi gage into the line running from the pressure side of the pump to the unit. Gage should read around 925 or 950 psi.

10. Sometimes in operation, a slight rattle on turns will be noticed on the power steering unit due to increased lash between the ball nut and worm when off the high point. This lash may be safely reduced to eliminate the rattle.

ANSWERS TO QUIZ

(turn page upside down)

1. Smaller.
2. Line which will enter return out of position causing oil leak.
3. Loosen the Pitman arm screw in Pitman arm shaft until lock of lubrication in steering linkage. Then increase pressure to proper level.
4. To center itself.
5. Loosen pump belt, low fluid screw.
6. $\frac{1}{2}$ inch.
7. Major step of lifting first was omitted here.
8. True.
9. False. Lash should not be reduced.
10. False. Lash should not be reduced.

FORUM MERCHANDISING FORUM

Care in Wording Your Ad

While this column is devoted to merchandising ideas and trends, one experience recently by a San Diego used car dealer is not recommended! The item was carried in some daily newspapers as well as in the Ohio Automobile Dealers Assn. bulletin.

Seems the California dealer printed a quantity of paper napkins for distribution purposes. Each napkin contained an offer for \$25 toward the purchase of "any car" on the dealer's lot. Two junior college students gathered up 48 of the napkins and presented them as payment for a car selling for \$1200. The dealer declined and suit was then instituted. The result was the dealer had to settle for \$1200 in value. Shortly thereafter, the dealer published an advertisement declaring that the napkins are now "worthless except for use as napkins."

Washes Car After Repair Job

Candidate letters for Merchandising Forum awards continue to come rolling in to the editors. Those selected to receive an award of \$7.50 for their ideas this month include Ed Mayover, manager of Eddie's Service in Bradenton, Fla., who writes:

"We never do a major job or overhaul without washing the car before letting the owner see it, and this includes vacuuming the interior."

Boosts Sales of Oil Filters

Another Forum award goes to H. Muller of Harvey Muller Service in Danboro, Pa. Harry uses an empty milk carton and some sand to boost sales of oil filters. When making an oil change, "we remove the cartridge from the filter, set it aside to drain . . . then place the cartridge atop a balancing scale."

On the other plate of the scale is placed a new filter. As the new filter weighs less than

the old filter with its trapped sediment, this fact is graphically shown the customer by adding sand to a milk carton and placing it on the new filter side of the scale. This represents the amount of dirt in the customer's filter.

Turnpike Cruiser Under Glass

Mobile merchandising is joining the growing family of mobile homes, mobile TV stations, bookmobile libraries, and other versatile applications of modern automotive equipment.

Earlier this year, the Mercury Division of Ford Motor Co. launched its tour to transport its XM-Turnpike Cruiser to widely separated parts of the country in one of these trailers. Known as the "Van-O-Rama," the \$50,000 trailer is designed with 20-foot by 6-foot side windows of safety plate glass supplied by the Libbey-Owens-Ford Glass Co. The side window can be lowered by a special winch to open the interior of the van. The Cruiser is turned sideways by means of a turntable, and visitors inspect the model from walkways installed on either side.



Glass trailer displays Mercury XM-Turnpike Cruiser.



Snow Time is No Time to Plan Winter Promotions

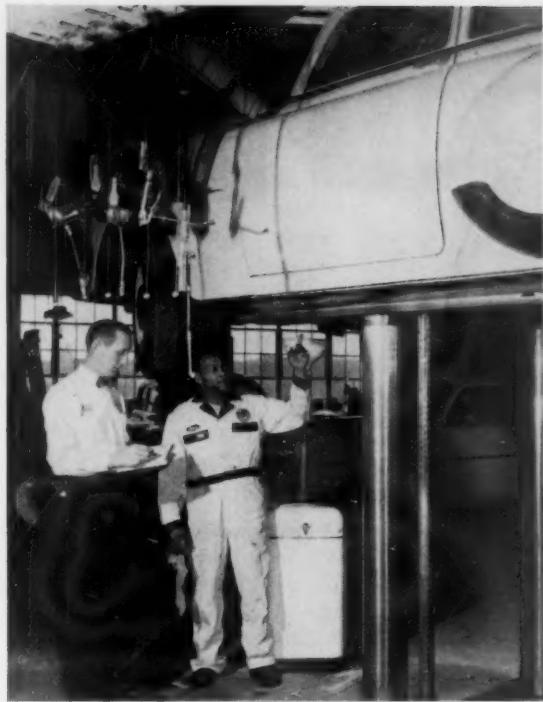
Appropriate use of promotional materials furnished by manufacturers should be used. For example, below photo shows the promotion of an "Anti-Freeze Week" based on various climate patterns across the nation.



Falling leaves mean time to "rake-up" your

THE "early bird" Automotive Service Specialist has been spending some time these past few weeks working on and planning a Winter sales and service program. He knows that too many of his customers are inclined to put off to the last minute—even to the time when snow is actually in the air—any attempt to winterize their cars.

This Service Specialist knows that while the motoring public in general appreciates and understands the need for anti-freeze, winter



For an all-around Winterizing check, putting the customer's car up on a lift is recommended procedure. Have a check list prepared in advance for use by your service salesmen or mechanics on the job.

share of Winterizing Service Sales profits

lubricants, snow tires and chains, and the like, a number of them need to be urged and reminded of the importance of overall preparation of their cars for the winter months ahead.

Three Phases Of Promotion

In short, "Now is the time for all good Service Specialists to come to the aid of Winterizing Promotions." Your Get-Ready-for-Winter Promotion can be looked upon as having three phases or levels: 1) Direct mail and local news-

paper advertising. 2) Banners and Displays at your location. 3) Personal Selling Emphasis done by you and your staff to customers in for service.

In the case of Direct Mail, attractive fliers are excellent. Mail them to your regular customer and selected customer prospects. Be sure to itemize the services and inspections you are offering. Make sure your location and firm's name is clearly identifiable. Coupled with these fliers you may want to insert ads in your local newspapers. Again, clear, concise, easily understood messages are recommended.

Excellent Promotional Materials

In the matter of Banners and Displays at your shop or service location, draw heavily upon the materials and posters furnished you by the manufacturers of the products you are particularly stressing at this time of year.

For example, selling anti-freeze is backed up by many manufacturers' nationwide campaigns. To mention but a few: As one phase of its campaign, one firm is promoting a "Lucky Sweepstakes." Another firm has colorful posters showing a mechanic in the snow working on a car with a steaming radiator. This caption reads: "Have a heart—get your anti-freeze early." Another large manufacturer has as one of the highlights of its campaign a map of the nation with various sections set aside for "Anti-Freeze Week"—depending upon the climate patterns of these sections.

Incidentally, in making full use of the banners and promotional materials available from manufacturers, you not only emphasize your Winterizing Promotion to your customers but you "remind" your own staff of the serious manner in which you take this time of year to realize profits on replacement parts, accessories, and items related to "Car Winter Insurance."

From the Personal Selling Emphasis standpoint, a thorough check of the customer's car is in order. Obviously, when selling anti-freeze, the entire cooling system should be checked. Radiator hoses, fan belts, hose clamps, thermostats, radiator pressure caps, sealer for the radiator immediately come to mind. Check the water pump carefully as this is of vital importance to the overall cooling system.

Check The Electrical System

The electrical system needs a thorough and careful check. THIS SYSTEM MUST NOT be
(Continued on page 140)

MANAGEMENT CLINIC



Look Before You Lease!

Must reading for the Service Specialist planning to rent at a new location:

Here is outlined the major kinds of leases and their relation to sales volume

BILL had been in business in the same Arizona town for seventeen years. During that time he had an unbroken record of meeting every obligation on or before the due date. He had an open line of credit at the bank. His suppliers considered him a preferred risk.

Suddenly, he found himself unable to meet either his notes at the bank or his bills when due.

Bill told his troubles to a nationally known credit man who happened to be one of his regular winter customers. The credit man and Bill's public accountant went over his books together. They quickly spotted the trouble.

Eight months before, Bill had moved to a new location and larger quarters. The annual rental was only slightly higher than he had paid for his old quarters, but it was a different type lease. His new lease was a flat rental lease. Under his old lease his fixed payments had only accounted for about twenty-five per cent of his total rent. More than sixty per cent of his percentage payments had been made during three rush months. The other forty per cent had been spread out over the other nine months.

Ignored Busy Season

The new lease had been signed at the end of his busy season, when he had just paid approximately two-thirds of a year's rent on the old location. Then he had to pay three-quarters of a year's rent on the new location before busi-

ness picked up. He had failed to take this into account when contracting for new equipment.

Added to this, the new building was badly damaged by a wind storm. His new lease made him responsible for repairs to the building, but he had failed to have the building added to his fire, water and wind insurance, so the loss was his.

The new location was ideal to catch the lush winter vacation trade who were good customers, but it was out of the way for some of his regular year around customers. It took five months for sales to catch up with the corresponding months of the previous year, which gave him another kick in the pocketbook.

Because of his long previous record his bank gladly saw him through, but most small garage operators can not point to a seventeen year perfect credit record.

Leases Play Important Role

Bill's case is not unique. Credit men, public accountants, and attorneys dealing in bankruptcy matters and creditor's settlements say leases are playing an increasingly important role in the financial troubles of small town service businesses, particularly in the South and Southwest.

Lack of foresight and ignorance of the various types of leases are cited as the primary causes of the increase.

(Continued on page 93)

News of Automotive Education

In the past, MOTOR AGE has made it a policy to report the happenings and trends among the many fine schools and programs devoted to helping the Automotive Service Specialist to add to his skills and know-how. This month the editors are initiating a feature aimed at centralizing this information in one department.

Emphasis Is Added To NSPA's Program

A great deal of emphasis has recently been added to the NSPA "Automotive Instruction in Our Schools" Program which was inaugurated a little over a year ago.

This program, to make tangible inroads toward relieving the serious shortage of an estimated 100,000 auto mechanics, is receiving special attention from NSPA wholesalers and local vocational school officials in nineteen states—Arkansas, California, Illinois, Kansas, Kentucky, Maine, Montana, Nebraska, Nevada, New York, Ohio, Oklahoma, Pennsylvania, South Dakota, Tennessee, Texas, Vermont, West Virginia and Wisconsin. In these states, NSPA wholesaler members last Spring were furnished with special lists of automotive vocational education personnel interested in the "Schools" Program.

According to J. L. Wiggins, NSPA's Executive Vice President, the 1956 NSPA Vocational Education Subcommittee is comprised of Robert E. Phelps, Chairman, Phelps-Roberts Corporation, Washington, D. C.; M. W. Bazner, Sr., Ammco Tools Inc., Chicago, Illinois; H. G. Jasperson, Auto Parts Company, Topeka, Kansas; A. P. Johnson, Cummings & Emerson, Peoria, Illinois; J. Ray Riley, National Bushing & Parts Company,



EXPLAINING the fine points of spray gun techniques to a Japanese and a Persian student during a recent session of the Binks Spray Painting School is instructor William Beacham (left). Binks next session starts Oct. 1. Write for further information to Binks Mfg. Co., 3122 W. Carroll St., Chicago, Ill.

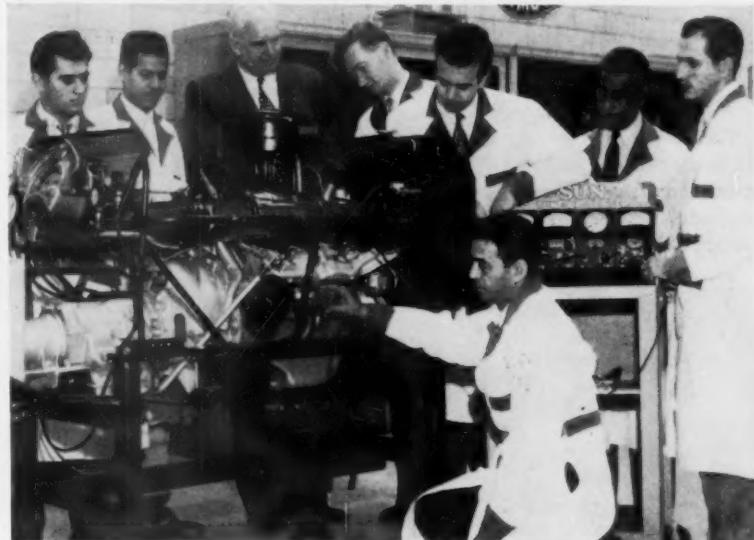
Minneapolis, Minnesota; E. W. Windsor, The Sherwin-Williams Company, Cleveland, Ohio; and George W. Stout, Secretary.

"Good Servicemen" AMA Booklet Topic

A new booklet telling how an automobile dealer can assist local schools in training automotive mechanics has been published by the Automobile Manufacturers Association.

The booklet, "What Can a Dealer Do to Get Good Servicemen," was developed by the Service Managers Committee of the AMA in cooperation with the American Vocational Association. The publication is part of a long-range program for developing an adequate supply of properly trained servicemen to meet the growing needs of the automotive service business.

"What Can a Dealer Do to Get Good Servicemen" is part of a series prepared by the joint industry-education group, the Automotive Industry-Vocational Education Conference on Public School Automotive Instruction. Inquiries may be addressed to AMA at New Center Bldg., Detroit, Mich., concerning this program.



ONE OF THE FIRST classes to be enrolled in Chrysler Corporation's new training center at Centerline, Mich., is this export technical training group. The men come from all over the world to receive training. Here the group studies a V-8 engine with chief instructor J. R. McIntyre (3rd from left).

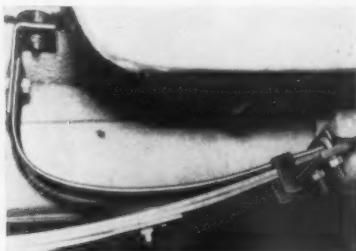


Power Take-Off

This model "JN" Spicer power take-off is designed to fit Chevrolet, Warner T-98-A, and New Process four-speed transmissions. The new power take-off is said to deliver up to 75 per cent of engine speed, particularly desirable when used with late model hydraulic pumps. It is available with 13/16 inch round; 1 1/8 inch round; or 1 1/8 inch tapered output shaft. Cable control is optional. The manufacturer also states the unit can be supplied for mounting directly to certain Hydrexco, Vickers, and Commercial Shearing pumps. Write: Dana Corporation (M.A.), Toledo 1, Ohio.

Helper Spring

The "Rolkar" stabilizer and helper spring is intended to supplement the rear springs to handle load variations in the average car. Claimed to be noiseless, there is a

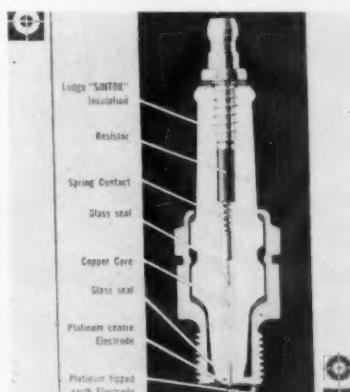


spring kit to fit most popular cars, in some cases, as far back as 1935. Installation requires an open end

wrench and a few minutes' time, according to the maker. Write: John A. Roehrig (M.A.), 1422 Powers Run Road, Pittsburgh 38, Pa.

Spark Plug

The Lodge platinum pointed spark plug is said to be capable of



operating over a wide heat range. It is also claimed to possess resistance to spark erosion and chemical corrosion. In addition, the plug will hold its gap adjustment over a long period of time and features a special material that replaces porcelain as the insulator, according to the maker. There is a Lodge plug for many foreign, race and sports cars in addition to American passenger cars. Write: Lodge Spark Plug Company (M.A.), 401 E. Washington Blvd., Los Angeles 15, California.

Vent Latch Kit

A kit consisting of the button, spring, washer and pin for repairing vent latches is now available from Car-Pak. According to the company, the kit will fit most models of all popular cars. Write: Car-Pak Manufacturing Company, Inc., 994 Winder St., Detroit 7, Michigan.

Brake Seals

When installed, these safety brake seals are said to prevent water and abrasive elements from entering the brake mechanism. Utilizing baffling, air circulation and centrifugal force to do the job, the seal is also claimed to help prevent frozen brakes. The maker states

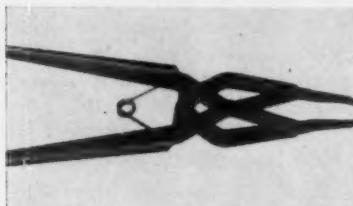


that installation takes less than an hour without the need for special

tools. Write: C. M. Mikkelsen Motors (M.A.), New Hampton, Iowa.

Spreading Pliers

This parallel action spreading pliers for removing synchronizing and snap rings in automotive transmissions is said to feature a non-slip grip. According to the manu-



facturer, the parallel action of this tool, and a recess in the forged tip will prevent rings from slipping when a load is applied. The spring of this snap-ring pliers in the handle holds the jaws closed. A reverse action leverage opens pliers when the handles close. Write: Utica Drop Forge & Tool Corporation (M.A.), Utica 4, New York.

Top Dressing

Pro-Tex convertible top dressing is said to make convertible car tops water-repellent and long-lasting. The water-repellent silicone product is clear, colorless and will not streak or discolor the convertible top, according to the maker. The formula is said to protect any fabric including nylon and is applied with a brush. Write: The Bell Company, Inc., (M.A.) 411 North Wolcott, Chicago 22, Illinois.

Fiberglass Solder

Swiss Perma-Bond plastic fiberglass solder, the manufacturer states, thoroughly air dries in 5 to 15 minutes. It can be applied in any desired thickness and is ready to sand and paint. In addition, the solder is said to have exceptional adhesive qualities. Write: Swiss Laboratory (M.A.), Cleveland 14, Ohio.

Exhaust Gas Tester

The new Hanson model 20 exhaust gas tester is claimed to check engine combustion efficiency at all speeds. This permits fast, accurate carburetor adjustments, according to the maker. The unit's replaceable, 12 foot neoprene pick-up tube slips into the tail pipe and is held in place with a spring clamp. A 4-color dial is marked for road test and idle, and color zoned for performance readings. Write: Harvey E. Hanson Co., Dept. MAP (M.A.), Lake Blvd. and Commercial St., Paw Paw, Mich.

Distributor Wrench

This distributor bolt wrench is said to service all 1955-56 Chrysler-built V-8's. It is the maker's latest addition to a matched set, and can be used with any 3/8 inch drive handle or ratchet. The wrench clears the engine compartment obstruction, is accurately broached and has a durable nickel chrome finish, according to the maker. Write: Herbrand Tools (M. A.), Fremont, Ohio.

Pressure Cap Tester

An easy-to-read test unit that detects faulty radiator caps and leaky radiators has been marketed



by AC. The cap-and-radiator tester weighs about 16 ounces. According to the maker, the unit can produce pressures up to 15 pounds per square inch and has an easy-to-

read dial that shows rejection limits. Four adapters furnished with each tester permit the checking of any cap or radiator, it is said. Write: AC Spark Plug Division of General Motors (M.A.), Flint 2, Michigan.

Automobile Tire

A new principle has been incorporated in the newest General tire. Possessing what is known as dual



curvature, the tire has two points of contact with the road. The "Dual 90" has two separate treads with a stabilizing groove running down the middle. Besides giving the appearance of two tires on one wheel, the unit is said to provide added durability and safety features. Write: The General Tire & Rubber Co. (M.A.), Akron, Ohio.

Casting Repair Kit

The Chain-Lock method for cold repair of cracked or broken castings, has been marketed in kit form by the manufacturer. This process is said to restore cracked or broken castings to a useable condition. Repairs are claimed to be water and pressure tight, and resistant to extremes in temperature. The kit contains all tools, equipment and instructions necessary to repair engine blocks, heads, cylinders.

(Continued on page 124)

DISPLAYS

MERCHANDISING AIDS

SIGNS

PACKAGING

Counter Display

A counter display featuring Barrett's Speedhone for reconditioning hydraulic cylinders is now avail-



able. This compact display unit displays 6 Speedhones, 3 standard with rigid shaft and 3 deluxe models with flexible shaft. Each model is individually packed for easy handling. Especially adaptable as a merchandiser, it is refilled with hones from stock. Write: Barrett Equipment Company (M. A.), 21st and Cass Avenue, St. Louis 6, Mo.

Hand Cleaner Display

A double-purpose display unit is now being distributed by the manufacturers of Quickee waterless hand cleaner. It is available free, together with a supply of give-away leaflets and free consumer samples of the product, in a special assortment carton.

The piece may be used either as a shelf extender or as a small-space counter display. In addition to featuring a 5-oz. and a 14-oz. can of Quickee, the unit holds a quantity of leaflets for customers. Write: Quickee Products, Inc. (M. A.), 143 Woodworth Avenue, Yonkers 2, N. Y.

Oil Seal Packages

A new family of packages has been adopted by this maker of automotive replacement seals. The new package for C/R oil seals is attractively printed in fresh green on a buff background and effectively displays the C/R symbol. Write: Chicago Rawhide Manufacturing Company (M. A.), 1301 Elston Ave., Chicago 22, Ill.

Aerosol Package

Miracle Power, a graphited lubricant, is now available in a grip-size, 11-ounce, self-pressurized sprayer. The lubricant is said to impregnate metal surfaces provid-

in its six plastic bins which are notched so that with the dividers which are furnished, a total of 24 bins can be created. Write: Lamp Div., Westinghouse Electric Corp. (M. A.) Bloomfield, New Jersey.

Muffler Sign

Available to AP muffler specialists is a 12 x 12 inch electric night light sign in full color which serves as a reminder to motorists at all times. Made of translucent plastic, the light-weight sign has an eight foot cord and uses a standard 40 watt bulb in a 110-volt a.c. system. Write: AP Parts Corp., 1801 Spielbusch Ave., Toledo, Ohio.



ing lubrication to protect parts. The lubricant's film will not drain or burn off and also helps regular lubricants cling to metal surfaces, it is stated. Write: Miracle Power Div., AP Parts Corp. (M. A.), Toledo, Ohio.

Bulb Merchandiser

This automotive bulb merchandiser is made with six plastic bins which swing out for access to the bulbs. The unit will hold 160 bulbs

Heater Parts Display

This colorful heater parts display permits quick selection of replacement parts by the buyer. The assortment is said to comprise all heater parts generally used on heater repair jobs. Write: Everhot



Products Company (M. A.), 2001 West Carroll Ave., Chicago, Illinois.



Service Suggestions

Making Adjustments on Mercury Steering Gear

Correct adjustment of the Mercury steering gear assembly is very important. Before any adjustment to the steering gear is made to correct a complaint of hard or loose steering, shimmy or road shocks, inspection of front end alignment, wheel balance, shock absorbers and tire pressures should be made. The recirculating ball steering gear has only two adjustments: worm bearing preload, and sector and ball nut backlash.

To accomplish proper adjustment, the following procedure is recommended: Disconnect the pitman arm ball stud from the steering cross link. Loosen the steering column clamp at the instrument panel and also the steering column attaching clamp at the steering gear housing. Loosen steering gear housing attaching bolts at the frame side rail, thus alleviating any possible bind between the steering column and the steering gear worm shaft. Torque steering gear housing attaching bolts to 45 to 50 lbs. ft. Snug up steering column clamp bolts at the instrument panel. Loosen sector shaft adjuster lock nut and back off adjuster screw a few turns. With a spring scale at the rim of the steering wheel, measure the pull required to keep the wheel moving when off the high point (at least 30 deg. off center). This will determine the worm bearing preload. Pull required to move the wheel must be $\frac{1}{4}$ to $\frac{3}{4}$ lb. on a 9 inch radius. To correct worm

bearing preload, loosen adjuster lock nut and tighten or back off adjuster as required, to effect the $\frac{1}{4}$ to $\frac{3}{4}$ lb. pull on the steering wheel. Tighten worm bearing adjuster lock nut and recheck pull on the steering wheel with the scale.

When the worm bearing preload has been adjusted correctly, the sector shaft adjusting screw should be turned clockwise until a pull of $\frac{7}{8}$ to $1\frac{1}{2}$ lbs. is required to rotate the worm past the center high point. No perceptible backlash is permissible 30 deg. either side of center. When this adjustment is accomplished, lock adjusting screw lock nut. Tighten steering column clamp and connect steering cross link to pitman arm ball stud. Check lubricant level, add as required, and road test car.

Anodized Aluminum Parts Require Special Cleaning

The gold-colored anodized aluminum on the wheel covers and Flight Sweep panel used on the Plymouth "Fury" and the center grilles on P-28 and P-29 models should be cleaned with a mild detergent and soft brush. Cleaning these surfaces with polish, abrasive cleaners or steel wool will remove the protective coating and may scratch and discolor the finish. Care should be taken to protect "Fury" wheel covers when cleaning white side-wall tires with cleaners containing alkali. These solutions can cause permanent damage to the gold anodized aluminum trim.

Proper Adjustment of Car Safety Seat Belts

When installing safety seat belts in Lincolns, it is desirable that both parts be kept as short as possible. For this reason, it is suggested that each belt be custom fitted to the vehicle's normal occupants. The belts should be adjusted for length at the anchor bolt end. The owner should be advised to make sure that the belt ends are not left dangling outside the vehicle when they are not in use. This will help prevent their becoming soiled and frayed.

Important To Properly Tighten 18MM Spark Plugs

It is extremely important that the 18mm spark plugs be tightened to the specified torque of 15-20 foot pounds. A loose plug might cause an engine noise with cam shaft frequency which could easily be mistaken for a tappet or piston pin.

Procedure to Tighten Front Fender Moldings

If the forward end of the front fender molding on the 1955 Lincoln does not fit tightly against the fender, it can be corrected as follows: Remove the molding and move the forwardmost clip as far into the nose of the molding assembly as possible. A new hole should then be drilled in the fender to correspond with the new clip location.

READERS'
CLEARING
HOUSE

TROUBLE SHOOTING

Erratic Shifting of Hydramatic Transmission

The transmission of a 1952 Oldsmobile acts like it doesn't downshift until after the car is stopped. When stopped, the transmission seems to be in two speeds at once and makes a noise similar to turning gears. The noise continues until a severe clunk occurs. The transmission then shifts into low gear. If I attempt to move the car before the clunk, the slippage is excessive. Half throttle is necessary to make the car move. The transmission pressure at idle is 55 lbs, goes as high as 75 lbs under various throttle positions and 175 lbs in reverse. When the transmission is acting abnormally the pressure remains stable, ranging between 55 and 75 lbs. We recently overhauled this transmission, replacing all clutch discs, seals, oil delivery sleeve and bands. Also, we tried a new inner valve body and governor assembly without results.

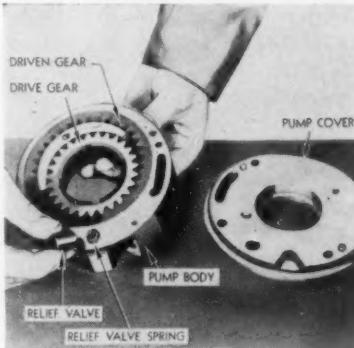
Al. Pagliaro
Pagliaro Bros.
Kintnersville, Pa.

THIS condition is probably caused by sticking control valves. Determine the effectiveness of the torous check valve and pump

relief valve by checking the rate at which the fluid drains back from the coupling into the transmission. Apply the hand brake and make sure the fluid is at the full mark. Shut off the engine and wait ten minutes. Recheck the fluid level with the engine off. If after ten minutes, the fluid level has not risen more than $\frac{1}{2}$ inch, the check valve and relief valve are operating

end-play on a 1955 Oldsmobile. The play is in the housing between the oil seal and the bearing retaining plate. You can take hold of the axle flange and pull the axle and bearing out $\frac{1}{8}$ inch or more. Is it possible to get a shim or plate to fit between the bearing and bearing retaining plate to correct this?

Stanley Wall
Stans Atlantic Service
Wildwood, New Jersey



properly. If the oil level rises more than $\frac{1}{2}$ inch, the check or relief valve is not operating properly and should be replaced.

Wants Solution to Axle Shaft End Play

I have trouble with rear axle

THE correct end-play for these jobs is .012 to .015 inch. If the play is between the housing and the retainer then, either a new retainer should be installed or a shim installed between the bearing and the housing. A suitable shim can be made from a piston ring spacer.

Ford Six Is Slow to Show Oil Pressure

We have a customer with a 1953 Ford Six Mainliner. When this car is started after standing for some time, the hand on the pressure gage fails to move out for a few seconds. During this pause, there are two or three thumps in the engine. How much damage would this be doing

FOR ADDITIONAL SERVICE INFORMATION REFER TO CHILTON'S

PROBLEMS



By Jack Montgomery
Technical Editor



and is there any special way of curing the trouble?

Emil M. Hall
Pockrandt Sales & Service
Saginaw, Michigan

USUALLY when a condition like this develops it is due to the oil pump losing its prime or a clogged oil pump screen. I would suggest draining the crankcase and flushing the oil pan. If this doesn't help, remove the oil pan to check the relief valve in the oil pump. Also, make an oil pressure test on the bearings. This will show if any of them are loose or need replacing.

Has Problem with Wrist Pins Seizing

After renewing the rings, pins and bushings of a 1950 Pontiac Eight, 6 of the pins froze and broke the pistons at the pin lock. This car was driven only about 100 miles with an oil pressure of 45 lbs. What would cause this trouble?

Irving M. Fox
Whiteley Garage
Garards Fort, Pa.

AS you probably noticed when this job was torn down, the connecting rods are rifle drilled in order to supply oil to the wrist pins.

For the pins to seize, either they were fit too tightly or they were starving for oil. Before putting this job together, make sure the connecting rod insert with the drilled hole is installed in the connecting rod upper half. This hole feeds the oil to the piston pins. I would also suggest dipping the piston in oil before installing them. When starting the engine, set the throttle at a fast idle to insure adequate oil supply to the cylinder walls.

Has Real Problem with Carburetor Flooding

We have experienced a great deal of carburetor flooding trouble on a 1955 Chevrolet V-8 (Powerglide). To date we have cleaned the original carburetor several times, installed and inspected new needle valve and seat assemblies, reset the float level, installed 3 new carburetors, pump and filter. But to no avail. The car maintains a steady 15 inches of vacuum and constant 4 lbs. pump pressure. The ignition and distributor have been completely rechecked and new plugs have been installed. Compression is normal, air cleaner and automatic choke and heat riser are also all

right. The car runs fine, acceleration and performance are good until it is permitted to idle for any length of time, then it floods.

Joseph Doyle
Joe's Super Service
Bowie, Arizona

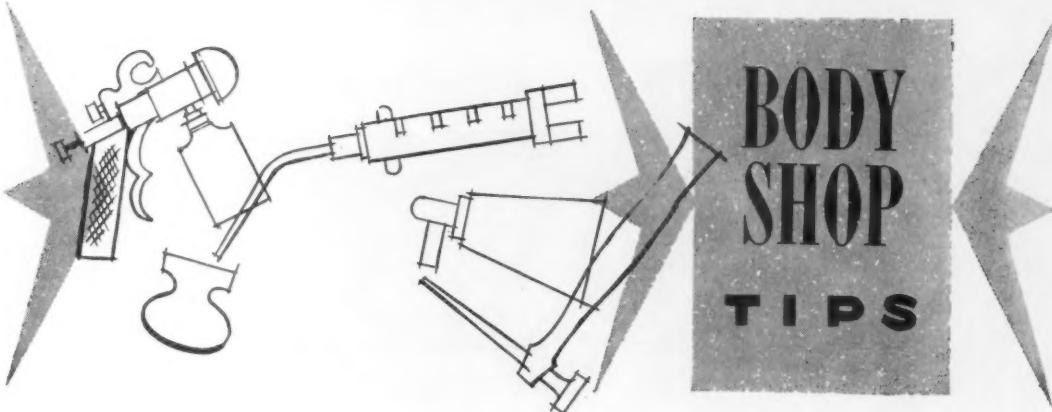
SINCE the fuel pressure and so on is normal, your trouble is probably caused by dirt coming from the gasoline tank or lines. The dirt is getting through the filter and is causing the needle valve to seat poorly. I would suggest removing the gas tank and having it steam cleaned and the gas line blown out with compressed air.

Hydraulic Lifters Noisy In Few Hundred Miles

I am having trouble with the
(Continued on page 183)



MOTOR AGE FLAT RATE AND SERVICE MANUAL



BODY SHOP TIPS

are worth

\$7.50

If you've developed an idea that has helped you to do body and fender work or painting better or faster, it may be worth money. Jot down the idea and, if necessary, make a rough sketch. Sometimes a snapshot will help. Just make the description of your BODY SHOP TIP clear, and if it is used, you'll receive a check for \$7.50.

our station wagon delivery truck, plus a wooden platform that slides on the frame. This unit makes loading and unloading heavy parts and assemblies much easier. On the frame there are two metal hooks that drop into the space where the tailgate meets the body. (This holds the frame in place.) In use, the platform is pulled out to the edge of the truck, loaded and then pushed easily back into place. When necessary, the frame and platform

the windshield as usual with a sealing gun. Do not remove the tape until the excess adhesive is removed from the tape and rubber. Also, you will find that it won't be necessary to clean the glass with gasoline and smear it. *John Woitas, Deveraux Motor Sales, Freeport, Pa.*

Magnetic Based Light Speeds Work Inside Car

When doing small upholstery jobs inside the car you need a good light. The handiest type I've found is a magnetic based drop light that will stay put on any metal. In addition, when working, I place any screws on the base in rotation as I remove them. This speeds replacement where different sized screws are involved. *Willard H. Blevins, Hopkins Motor Co., Bel-Air Maryland.*



may quickly be removed from the vehicle. *Edward Mayover, Eddie's Service, 1401 - 14th St., West, Bradenton, Fla.*

Glass Sealing Clean Up Cut by Masking Tape

I've found that when you have to seal a windshield or rear glass, clean up time can be saved by putting masking tape on the glass next to the rubber. Place it so no glass is exposed between the masking tape and the rubber. Then, seal off

Rubber Cement Helps In Gage Replacement

It is sometimes difficult to replace gages in 1956 Chrysler products due to the construction of the dash. I have found that a small amount of rubber cement applied around the edges of the gage face will hold it in place on the dash until the attaching screws can be started. The cement does not cause removal problems later because the small amount applied pulls away easily. *Joe Purcell, 1404 Elkin Ave., New Albany, Indiana.*

Uses Damaged Door to Spot Holes on New Door

When installing a new door panel, there is always the problem of lining up the mouldings properly. To do it, we take the damaged door panel and straighten it enough to lay it on the new panel (after new one is installed). Line up the door handle holes and vise grip at that point. Line up the lower right hand corner and vise grip at that point. Mark the new panel and drill the holes. *Harold M. Smith, Tramontin Pontiac, Inc., 508 Lexington Ave., Clifton, New Jersey.*

Sliding Platform For Station Wagon

We have fashioned a wooden frame that rests on the bottom of

Up-To-Date Body Parts Price List

1956 Various Models

Plymouth

1646402—Rear Deck Lid Lift, P29—4 dr.
1591665—Rear Deck Lid Weatherstrip, 4 dr.
1553932—Rear Bumper Face Bar
1655268—Rear Bumper Stone Deflector, R—4 dr.
1579809—Upper Cowl Panel, 4 dr.
1591208—Cowl Side Panel, R—4 dr.

Pontiac

4210499—Front Door Shell, R—4 dr.
4156606—Front Door Upper & Lower Hinge, 4 dr.
4664954—Front Door Lock Assembly, 4 dr.
4646569—Front Door Remote Control, 4 dr.
4643474—Front Door Ventila- tor, less Glass, 4 dr.
4156296—Front Door Ventila- tor Weatherstrip, R—4 dr.
4644751—Front Door Manual Regulator, R—4 dr.
4157322—Front Door Elec- tric Regulator, R—4 dr.
4667654—Rear Door Shell, R —4 dr.
4255992—Rear Door Outer Panel, R—2737, 2837....
4647178—Rear Door Weather- strip, 4 dr.
4667433—Rear Door Lock Assembly, 4 dr.
4671623—Rear Deck Lid, 4 dr.
4671282—Rear Deck Lid Lock, 4 dr.
4661220—Rear Deck Lid Weatherstrip, 4 dr.
4651598—Rear Deck Front Panel, 4 dr.
4646485—Rear Deck Floor Pan, 4 dr.
4645021—Rear Deck End Pan
4667022—Cowl & Dash As- sembly, less Air Condi- tioning, 4 dr.
4667033—Cowl & Dash As- sembly, with Air Condi- tioning, 4 dr.

Pontiac—Continued

4.25	4647313—Cowl Side Panel, R —4 dr.	7.75
5.85	521300—Hood Upper Panel....	49.75
25.95	522077—Hood Ornament	11.00
2.95	520074—Hood Hinge Assem- bly, R	4.00
48.25	521464—Front Fender, R....	39.90
21.50	520005—Radiator Splash Apron	6.90
	Rambler	
58.50	4477245—Front Door Shell, L—Deluxe	52.90
2.25	4477247—Front Door Shell, L —Super	52.90
6.25	4477249—Front Door Shell, L —Custom	52.90
1.65	3411032—Front Door Lock Assembly, L	5.05
13.50	3410505—Front Outer Door Handle, L	3.40
1.95	4375746—Front Inner Door Handle	1.25
7.50	4475529—Front Door Remote Control, L	1.80
15.00	4477253—Rear Door Shell, L —Deluxe	52.90
65.00	4477255—Rear Door Shell, L —Super	52.90
20.50	4477257—Rear Door Shell, L —Custom	52.90
5.95	3410618—Rear Door Window Regulator, L	7.95
8.50	3412303—Rear Quarter Panel, L	45.50
67.00	4477220—Rear Fender, L— Super	29.90
4.75	3411796—Rear Fender, L— Custom	29.90
21.00	3410788—Rear Deck Lid....	36.50
3.75	3411352—Rear Deck Handle, L	4.85
120.00	3410178—Deck Drain Weatherstrip	3.75
45.00	3145141—Rear Bumper Face Bar	27.40
6.50	3146009—Rear Bumper Inner Back Bar, L	3.50
126.00	3145139—Rear Bumper Outer Back Bar, L	2.60
	3410369—Roof Side Rail, L....	13.40
	3410335—Roof Side Rein- forcement, L	3.40
	3411341—Cowl Panel	11.95

Rambler—Continued

3410133—Dash Toeboard As- sembly	33.45
3410360—Cowl Side Panel, L....	9.50
4477200—Front Floor Pan..	69.50
Studebaker	
1314628—Front Door Shell, R—4 dr.	57.50
1316062—Rear Door Shell, R —4 dr. except Y6.....	52.00
1316066—Rear Door Shell, R —4 dr. Y6.....	55.00
308168—Front Door Hinge, R	2.83
298352—Rear Door Upper Hinge, R	2.31
298354—Rear Door Lower Hinge, R	1.80
298974—Door Outer Handle	2.75
297938—Door Remote Con- trol, R—W285
1314346—Door Remote Con- trol, R—W4, 6; Y6.....	1.15
1312262—Front Door Lock, R	4.25
1312264—Rear Door Lock, R	4.00
1312138—Door Lock Striker, R95
1316036—Rear Outer Quar- ter Panel, R—4 dr.	52.50
1316121—Rear Quarter Gravel Deflector, 4 dr....	2.75
1316116—Rear Wheelhouse Panel, R—4 dr.	N.P.A.
1316120—Rear Deck Lid, 4 dr.	56.00
1316122—Rear Deck Lid Hinge, R	4.00
1312313—Deck Lid Handle..	4.00
2070X1—Deck Lid Weather- strip	4.50
1540278—Rear Bumper Face Bar	21.50
1316178—Roof Panel, W2, 4, 6	N.P.A.
1316179—Roof Panel, Y6....	N.P.A.
1312331—Dash Panel, 4 dr... N.P.A.	N.P.A.
310238—Cowl Side Panel, R —4 dr.	23.50
1312578—Cowl Top Panel Kit	N.P.A.
1312120—Body Center Pillar, R—4 dr.	21.50
297980—Front Sill Plate, R— 4 dr.	1.59

N.P.A. = No price available

(Continued on page 88)

\$25

FOR THE KINK
OF THE MONTH

TIME AND WORK SAVING IDEAS ON CARS AND

SHOP KINKS

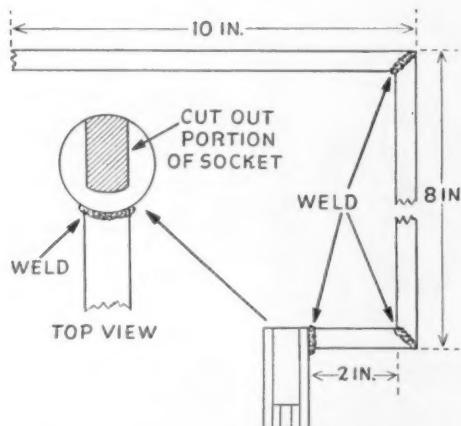
TRUCKS CAN PAY OFF. SEND YOURS IN NOW!

\$7.50

FOR EACH
KINK USED

\$25

KINK OF THE MONTH



Heat Gage Removing Tool

Here is a tool for installing and removing pencil type block heaters on Plymouth V-8 engines. Obtain 3 sections of $\frac{1}{2}$ inch rod in 10, 8 and 2 inch lengths. Weld them together. Add a $\frac{3}{4}$ inch socket. Hacksaw a $\frac{1}{2}$ inch slot, lengthwise, into the socket. To install, screw the heater into the engine head and unscrew the top nut completely. Screw the bottom nut down and tighten with the tool. Now, screw the top nut into position and tighten with the tool. *J. P. Sauchenke, Miller Motors, 10339 120 St., Edmonton, Alta., Canada.*

Quick Repair for Worn Threads in White Metal

I have a quick repair for worn threads in white metal. On occasion we have trouble with stripped threads on Ford carburetor bodies. A quick repair can be made by sawing a slot in the cap screws and inserting a wedge shaped piece of welding rod in the slot. When the wedge hits the bottom it spreads the screw and cuts new threads. *Leroy F. True, Rauth Motors, Hancock, Maryland.*

Finds Remedy to Lick Chevrolet Hesitation

Occasionally we have a 1955-56 Chevrolet V-8 come into our shop with the problem of acceleration hesitation. These cars always have 15,000 or more miles on the speedometer. To lick this problem, we remove the intake manifold and clean the exhaust heat passage. *W. M. Pruitt, Jr., Gaddy Motor Co., Inc., West D St., N. Wilkesboro, N. C.*

Uses Spring to Solve Oil Burning Problem

A 1954 and a '56 Ford came into the shop with a complaint of using oil. The oil was drawn in at the intake valve stems from rocker arm lubrication splash. To correct this we remove the intake valve springs and install a light spring on top of the umbrella to hold it down, in order to cover the valve

(Continued on page 68)

SELL that wanted

NEW CAR FEEL

**You can depend
on Perfect Circles to restore
lost horsepower!**

When a customer comes in for an overhaul job, he wants to be sure of top engine performance and oil economy. You can be sure of giving your customers complete satisfaction when you install PC 2-in-1 Chrome sets.

Good reasons why: Top compression ring was specially designed to perform where pressures are greatest, heat is highest, and lubrication is poorest. New Type "98" chrome oil ring with self-expanding spacer assures uniform pressure against the cylinder wall and provides a positive side-sealing action on the ring groove. Both rings are plated with thick, solid chrome that resists wear, more than doubles the life of cylinders, pistons and rings.

It all adds up to top engine performance—thousands of extra miles of sustained power and positive oil control. And more satisfied customers and more profitable overhaul business for you! Perfect Circle Corporation, Hagerstown, Indiana; The Perfect Circle Co., Ltd., Don Mills, Ontario.



PERFECT CIRCLE

2-in-1 Chrome Set with the New Type "98" Chrome oil ring*

*U. S. Patents 2,635,022
and 2,695,825

Shop Kinks

Continued from page 66

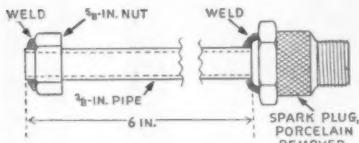
Checks for Shorts With Door Buzzer

We have had a number of jobs coming into our shop with improperly operating lights and turn sig-

stem bore. This can be done very simply by moving the intake rocker arms to one side and by using an impact type valve lock remover. The intake valve can be held up through the spark plug holes by a 5/16 inch rod, with a short bend at the very end, to install the spring retainer and lock. I found the ideal spring for this purpose in the Ford door lock, push button #OA-7022462. Cut one of these in the center to make two springs. Be sure to square off the cut end, or it will not push down evenly. This will completely seal the intake valves and you don't have to worry about the exhaust valves. *Joseph Sallay, Marshall-Field Motor Co., 2160 Lee Road, Cleveland Heights 18, Ohio.*

Makes Compression Gage Extension for Dodges

Here is a device I have made to use along with the compression gage on 1953 Dodges. The spark plugs on these cars are set in quite deeply and can't be reached with the ordinary gage. This extension can be installed and the compres-



sion gage is then easily attached to the top for reading. *Vincent Galloni, Lincoln Garage, Chambers St. and Morris Ave., Trenton, New Jersey.*

Trick Licks Speedometer Cable Greasing Problem

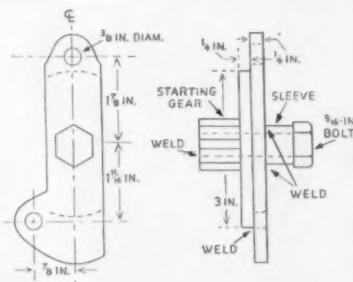
I have experienced trouble when lubricating speedometer cables. When replacing the cable, most of the oil runs out. Here is an idea to grease cables that overcomes this problem. Take a half inch SAE bolt, cut it off leaving about an

eighth inch of threads. Drill 5/16 in. hole through the center and tap a 1/8 in. pipe thread to install an Alemite fitting. Screw this into the cable and grease with hand gun.

Ben Gauthier, Auto Mechanic, U. S. Naval Hospital, St. Albans, New York.

Device Helps Turn V-8 Engine by Hand

It is tough to turn a Chevrolet V-8 (Powerglide) engine over by hand. Utilizing the starter gear and a few scraps I have fashioned a tool



that I bolt in place of the starter and enables me to turn it with a ratchet. To make it, I obtained two sections of $\frac{1}{4}$ inch iron and welded them together. Then, drilled a $\frac{9}{16}$ inch hole in the middle of both and inserted a nut and bolt. The bolt was then chucked on a lathe where one piece of iron was cut to a 3 inch diameter. Next, a sleeve to support the bolt was made and after assembly the gear was welded to the bolt. Then a sleeve was welded to the back of the iron to complete the tool. *James T. Calonico, Kaljian Chevrolet Co., Newman, California.*

nals. The fault is usually grounded or shorted wires, or loose connections. I have developed a gadget that speeds the checking job. I purchased a door type buzzer and attached long leads with clasp ends to it. To use, attach one clasp end to a wire and ground the other. If the buzzer sounds the circuit is completed. *Jim Watt, Locust Street Garage, 62nd and Locust Streets, Philadelphia, Pa.*

Way to Remove Grease Seals Without Puller

A quick and easy method of removing oil or grease seals where a shaft protrudes (thus preventing use of a common puller) is to drill 2 small holes near the outside edge of the seal opposite each other. Start self threading screws, then, retract and grind off the points. Reinstall and turn each screw alternately in until they back out the seal. *Franklin D. Swezey, Fletcher's Garage, 80 Chapel St., New Haven, Conn.*

If you have an original idea for a special tool, a short cut on a job or any trick of value to others, write it down and if necessary make a rough sketch. Just make it clear. Send it to Motor Age. If your Kink is used it may bring you \$7.50 or \$25. All entries become the property of the Chilton Company. Because of the quantity of entries sent in, none can be returned.



Emanuel Hochman, Vice-President and General Sales Manager, Bulova Watch Co., tells how:

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"We've put Bulova Radios into 17,612 jewelry stores — and captured a large share of the radio business!

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"In fact, we often make use of Air Express to deliver

finished radios to our retail outlets. And we never miss a date.

"Air Express took our new business 'off the ground' — keeps us the fastest-growing radio company in America!

"Yet, most of our Air Express shipments cost less than with any other complete air service. 10 lbs., for instance, New York to Jacksonville, Florida, is \$4.42. It's the lowest-priced complete service by \$1.32!"



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1956 New Passenger Car Registrations by Makes by States*

STATE AND MONTH	Buick	Cadillac	Chevrolet	Chrysler	Continental	De Soto	Dodge	Ford	Hudson	Lincoln	Mercury	Nash	Oldsmobile	Packard	Plymouth	Pontiac	Studebaker	Misc. Dem.	For-ign	Total	
Alabama.....	574	108	2307	87	40	134	1456	19	32	274	35	398	17	358	300	48	3	35	6,223		
6 Mos.	4162	860	15165	632	8	377	954	9952	180	213	1865	260	3068	109	2484	452	7	199	43,691		
Arizona.....	216	62	788	47	1	29	83	772	15	21	123	45	143	14	195	162	35	62	2,833		
6 Mos.	1255	395	4012	257	12	159	428	3556	70	117	610	214	838	85	1052	915	247	1	298	14,522	
Arkansas.....	136	44	632	22		18	65	532	7	16	128	12	56	5	136	130	27	9	2,115		
California.....	1745	427	7583	320	1	224	808	6531	116	135	1462	206	1931	57	2245	1489	375	52	25,707		
6 Mos.	4004	1685	13509	956	17	737	1722	10607	411	542	3030	812	3265	222	3900	2877	637	6	3487	52,586	
Colorado.....	326	119	1281	73	1	48	221	1047	54	44	223	84	275	24	347	219	60	7	40	4,493	
6 Mos.	2339	552	7738	556	8	376	1137	6157	284	273	1345	556	1950	157	2072	1566	461	10	169	27,842	
Connecticut.....	573	199	2137	197	1	153	431	1760	73	51	389	186	661	69	741	547	118	238	8,624		
6 Mos.	4140	1130	10849	1350	13	813	2349	9606	388	290	2133	981	4003	465	4045	3139	777	2	1145	47,721	
Delaware.....	60	35	484	25		19	49	331	1	10	64	13	103	4	169	90	23	12	1,516		
Dist. of Col.	920	210	2376	149		131	387	2192	8	68	462	83	677	33	990	672	152	86	9,794		
Florida.....	154	43	405	44		37	71	410	7	19	80	16	154	14	237	153	9	46	2,099		
6 Mos.	2255	431	3986	358	3	257	509	2493	82	93	489	97	1075	122	1816	1038	99	266	14,527		
Georgia.....	8012	2820	24405	1480	58	1154	2705	18654	500	920	3687	795	6808	421	5129	4769	990	25	1755	85,784	
6 Mos.	519	119	2563	66	2	77	229	12	21	323	47	449	12	477	480	89	1	32	7,764		
Idaho.....	193	53	512	59	1	35	94	440	57	27	125	55	10	167	147	57	17	2,299			
Illinois.....	1097	245	2536	244		181	485	1969	229	98	568	255	755	68	806	713	300	68	10,698		
6 Mos.	3100	861	9545	655	5	485	1041	7378	167	274	1369	490	2567	182	2231	1902	425	3	276	33,056	
Indiana.....	1798	451	5172	405	2	357	727	4298	120	126	948	240	916	63	818	659	142	6	322	13,951	
6 Mos.	10274	237	24797	2057	19	1894	3705	21071	622	683	4894	1355	8281	601	7921	6317	2857	12	450	100,106	
Iowa.....	599	125	1943	114	2	84	240	1468	58	36	297	77	385	33	478	389	93	54	8,475		
6 Mos.	3853	763	11915	776	13	442	1423	11428	55	206	1980	256	3156	121	3354	3170	571	6	165	44,943	
Kansas.....	856	194	3056	173	2	114	305	2581	74	58	475	198	682	54	600	541	146	2	34	10,145	
Kentucky.....	656	94	2339	89		73	177	1760	20	22	384	45	586	27	481	389	58	2	31	7,193	
Louisiana.....	564	144	2568	88	1	54	165	1900	18	28	307	81	341	20	438	629	65	39	7,723		
6 Mos.	3795	820	14984	575	6	460	1029	1358	88	218	1093	297	3885	192	2864	3761	629	186	47,240		
Maine.....	217	48	722	46	4	135	602	729	70	122	70	191	15	288	203	48	48	2,872			
Maryland.....	1223	248	3842	239	2	251	602	327	72	646	348	385	74	149	963	282	4	236	14,862		
Massachusetts.....	2778	112	5528	1065	8	1100	2355	2112	211	276	2481	461	3801	453	5802	3324	826	411	55,474		
6 Mos.	8061	1761	18121	171	15	1510	3104	18065	837	602	3290	2174	8486	505	7898	5476	929	7	1345	84,000	
Michigan.....	18973	6017	50601	2742	44	3051	6180	39219	1072	1518	5356	2388	14060	892	15356	1853	1816	20	1108	181,768	
6 Mos.	765	189	2909	139	2	157	391	1979	77	59	381	113	781	53	662	465	148	38	42	9,329	
Mississippi.....	5435	1149	15967	1074	13	1085	2446	12664	528	372	2971	950	5226	426	3716	3176	141	231	69,108		
6 Mos.	310	60	1231	53	1	30	144	825	10	18	145	94	57	14	314	216	50	7	3,670		
Missouri.....	2196	370	7890	344	2	254	821	5753	62	86	1062	86	1782	94	2206	1554	421	2	34	24,963	
6 Mos.	6633	1556	24218	1056	19	1290	2009	17166	194	392	3611	1019	5683	490	7126	4933	1140	11	421	78,976	
Montana.....	164	45	570	38		114	465	30	20	88	44	137	17	183	128	34	34	2,133			
Nebraska.....	1030	283	3174	304	4	148	600	2650	209	104	599	221	833	683	271	217	2	147	12,388		
Nevada.....	296	73	1045	50	1	50	113	902	16	19	138	32	253	18	273	194	30	12	3,505		
New Hampshire.....	41	9	104	3	1	10	11	11	1	11	30	4	7	30	44	14	14	467			
New Jersey.....	164	28	525	36	2	30	102	455	23	15	89	55	155	10	174	155	39	41	2,098		
6 Mos.	842	170	2633	207	4	164	436	2160	152	68	530	255	749	50	847	817	186	2	208	10,481	
New Mexico.....	11770	3335	25739	3829	51	3	3481	7172	2326	524	988	4921	1365	9376	755	1581	893	1510	7	1551	116,249
6 Mos.	300	85	1214	85	1	51	119	1015	14	32	251	35	281	6	255	466	52	58	4,060		
New York.....	1089	274	3660	273	3	159	239	2946	47	94	689	89	927	32	787	857	159	117	12,411		
6 Mos.	5095	1567	13183	1796	12	1392	2558	11012	294	486	2464	653	5084	372	5753	3639	597	373	3,367		
North Carolina.....	700	160	2576	156	1	99	239	2386	35	29	376	62	339	23	739	521	83	2	46	8,828	
6 Mos.	4985	1022	14856	996	13	788	1477	14203	195	232	2359	506	4147	215	4526	3143	746	18	4,785		
North Dakota.....	130	25	535	38		24	70	441	22	7	87	24	135	13	134	68	830	357	185		
Ohio.....	3079	658	8889	630	3	677	1738	7938	174	228	385	88	77	512	159	690	830	357	185		
6 Mos.	20231	4527	49747	4257	31	4288	9942	45789	1092	1463	9506	1505	16037	14126	2520	61	1218	205,566			
Oklahoma.....	531	157	2098	66		73	169	1814	25	33	306	52	473	19	414	369	80	34	8,893		
6 Mos.	3233	775	10928	355	8	422	973	8576	130	197	1650	322	2026	152	2319	432	165	2	35,753		
Oregon.....	542	144	1524	82	2	88	286	1283	30	40	291	141	382	26	385	365	118	2	5,930		
Pennsylvania.....	3496	767	9741	517	15	635	1460	7619	270	294	1943	835	2571	165	2497	2460	810	2	37,298		
6 Mos.	3123	620	8448	881	6	812	1969	7231	238	244	1555	519	2462	328	3811	2045	427	2	35,002		
Rhode Island.....	162	55	529	69	1	40	74	491	24	22	106	58	218	18	237	114	23	11	2,307		
6 Mos.	1306	349	3150	392	8	226	485	2711	133	90	565	342	1192	88	1453	734	238	2	307,811		
South Carolina.....	383	83	1584	58		53	117	120	7	115	152	36	246	5	321	211	31	38	4,547		
6 Mos.	2685	44	9447	349	9	334	827	7583	58	103	1120	184	1990	44	2256	1646	328	3	20,588		
South Dakota.....	130	22	396	23		17	54	343	20	4	67	38	93	6	93	71	31	16	1,424		
6 Mos.	1007	188	1311	184	1	125	384	2653	113	59	506	237	805	74	875	588	198	3	47,118		
Tennessee.....	688	129	2384	94	2	74	208	1849	19	34	320	48	494	14	467	318	77	14	7,212		
6 Mos.	4932	80	15045	629	12	599	1491	11657	183	201	2173	393	3785	150	3264	2587	625	5	412,318		
Texas.....	2556	675	9815	378	6	259	715	7388	96	154	1287	199	2134	78	1736	262	1	123	29,486		
6 Mos.	16344	3829	55729	2096	81	1591	4155	4027	485	923	7514	1050	12798	99	3844	10290	1982	8	710	170,275	
Utah.....	195	47	659	73	1	29	453	23	15	123	45	143	14	195	162	23	35	6,058			
6 Mos.	13504	3030	31																		

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Your Jobber.....

Current Passenger Car Price, Weight and Body Table

Following are prices at factory for cars with standard equipment as of August 27, 1956.
State or local taxes, transportation and finance charges and optional equipment are extra.

BODY MAKE AND MODEL	List Price at Factory without Federal Taxes	Federal Taxes and Handling Charges	Delivered Price at Factory including Federal Taxes	Shipping Weight	BODY MAKE AND MODEL	List Price at Factory without Federal Taxes	Federal Taxes and Handling Charges	Delivered Price at Factory including Federal Taxes	Shipping Weight	BODY MAKE AND MODEL	List Price at Factory without Federal Taxes	Federal Taxes and Handling Charges	Delivered Price at Factory including Federal Taxes	Shipping Weight
AMERICAN MOTORS CORP.					CHRYSLER CORP. cont'd					FORD MOTOR CO. cont'd				
HUDSON					DODGE, Cont'd					LINCOLN, Cont'd				
Wasp					Cust. Sier., 8 p.	2622	207	2829	3710	Premiere				
Sed. Sed., 4d.	2179	201	2380	3264	Cust. Sier., 8 p.	2720	215	2935	3800	Coupe	4212	4362		
Hornet-S.					500 Series					Sedan, 4d	4212	4362		
Super Sed., 4d.	2504	225	2729	3515	Coronet, V8					Convertible	4347	4362		
Cust. Sed., 4d.	2737	241	2978	3638	Club Sedan	2312	183	2495	3535					
Cust. H. T., 2d	2846	219	3095	3816	Sedan, 4d	2379	189	2568	3579					
Hornet-V8					Lancer	2437	193	2630	3555					
Cust. Sed., 4d.	2886	259	3215	3882	Lancer, 4d	2543	201	2744	3704					
Cust. H. T., 2d	3119	269	3388	3872	Convertible	2660	210	2870	3744					
METROPOLITAN*					Royal, V8					Tudor Sedan	2036	3430		
Hardtop					Sedan, 4d	2485	196	2681	3535	Sedan, 4d	2091	3500		
Convertible					Lancer	2550	201	2751	3570	Hardtop, 2d	2161	3545		
NASH					Cust. Royal	2656	206	2865	3759					
Statesman 6					Sedan, 4d	2569	203	2772	3685	MERCURY				
Sed. Sed., 4d.	2146	199	2345	3199	Lancer	2634	208	2842	3630	Medalist				
Ambass. 6					Cust. Royal	2740	216	2956	3809	Tudor Sedan	2036	3430		
Super Sed., 4d.	2425	219	2644	3555	Lancer	2838	223	3061	3755	Sedan, 4d	2091	3500		
Ambass. V8					Sta. Wagons					Hardtop, 2d	2161	3545		
Super Sed., 4d.	2716	240	2956	3748	Suburban, 8 cyl.	2588	204	2792	3749					
Cust. Sed., 4d.	2393	256	3195	3846	Cust. Suburb.	2685	212	2887	3754	OLDSMOBILE				
Cust. Hd. Top	3072	266	3338	3854	Sierra, 8 p.	2696	213	2909	3744	Series 88				
Cus. Sta. Wgn.	2106	189	2295	3110	Sierra, 8 p.	2795	220	3015	3859	Sedan, 2d	2206	3691		
RAMBLER-E					Cust. Sier., 8 p.	2815	222	3037	3844	Sedan, 4d	2268	3748		
Del. Sed., 4d	1642	153	1795	2891	Cust. Sier., 8 p.	2913	229	3142	3859	Custom	2181	3520		
Super Sed., 4d.	1743	162	1905	2906	Limo.	6992	526	7518	5145	Sedan, 4d	2316	3563		
Cust. Sed., 4d.	1851	171	2025	2929		7117	535	7652	5205	Hardtop, 2d	2316	3620		
Cust. Hd. Top	2008	182	2190	2990					PHOENIX					
Cus. Sta. Wgn.	2106	189	2295	3110					Sport Sed., 4d	2316	3610			
CHRYSLER CORP.									Sport Sed., 4d	2316	3635			
CHRYSLER†									Phaeton, 4d	2451	3550			
Windsor									Convertible	2636	3725			
Sedan, 4d	2606	209	2815	3900	Plaza 8									
Nassau, 2d	2638	212	2850	3910	Plaza 8	1720	143	1863	3170	PONTIAC				
Newport, 2d	2765	221	2986	3920	Bus. Coupe	1812	149	1961	3250	Chieftain 880				
Newport, 4d	2846	227	3073	3990	Club Sedan	1852	153	2005	3275	Sedan, 2d	2041	199	2240	3452
Conv. Coupé	3032	242	3281	4100	Sedan, 4d	2041	157	2061	3255	Sedan, 4d	2095	203	2298	3512
Twn. & Cty.	3283	260	3543	4290	Sedan, 4d	2041	160	2104	3295	Catal. Cpe.	2162	206	2370	3512
New Yorker					Sedan, 4d	2041	167	2208	3275	Catal. Sedan	2230	213	2443	3577
Sedan, 4d	3449	275	3724	4110	Belvedere 8					Sta. Wagon, 2d	2346	223	2589	3612
Newport, 2d	3609	287	3894	4175	Club Sedan	1982	163	2145	3285	Sta. Wagon, 4d	2424	229	2653	3707
St. Regis	3650	290	3940	4175	Sedan, 4d	2022	166	2188	3235	Chieftain 870				
Newport, 4d	3749	298	4047	4207	Sport Coupe	2119	173	2292	3230	Sedan, 4d	2202	211	2413	3512
Conv. Coupé	3880	308	4188	4360	Sport Sedan	2182	178	2380	3415	Catal. Cpe.	2264	218	2480	3512
Twn. & Cty.	4141	327	4468	4480	Coupe	2268	185	2453	3435	Catal. Sedan	2314	220	2534	3577
300B					Suburban 8					Sta. Wagon, 4d	2346	223	2589	3612
Sport Coupe	4044	320	4364	4145	De Luxe, 2d	2103	172	2275	3160	Star Chief 8				
DE SOTO†					Custom, 2d	2169	177	2348	3500	Sedan, 4d	2308	219	2527	3577
Firedome					Custom, 4d	2212	180	2392	3565	Coupe, 2d	2436	220	2685	3567
Sedan, 4d	2434	199	2633	3780	Sport, 4d	2370	192	2562	3601	Cust. Cat. Cpe.	2501	234	2735	3647
Seville, 2d	2485	203	2689	3800	Sport Coupe	2629	212	2641	3650	Cust. Cat. Sed.	2614	243	2807	3787
Seville, 4d	2578	210	2798	3920					Conv. Coupé	2680	263	3129	3642	
Sportsman, 2d	2598	211	2809	3835					Cust. Sta. Wgn.					
Sportsman, 4d	2690	218	2908	3945										
Conv. Coupé	2809	227	3036	4080										
Sta. Wagon	3078	248	3326	4085										
Firafire														
Sedan, 4d	2844	230	3074	3860										
Sportsman, 2d	3055	246	3301	3905										
Sportsman, 4d	3134	252	3386	3970										
Conv. Coupé	3239	260	3499	4075										
Pace Car	3305	265	3570	4070										
Adventurer	3410	273	3683	3870										
DODGE†														
Coronet 8														
Club Sedan, 2d	1996	160	2156	3250										
Sedan, 4d	2064	185	2229	3295										
Coronet, V8														
Club Sedan	2096	167	2263	3380										
Sedan, 4d	2164	172	2336	3435										
Lancer	2222	177	2399	3430										
Lancer, 4d	2328	185	2513	3513										
Convertible	2445	194	2639	3600										
Royal, V8														
Sedan, 4d	2292	182	2547	3475										
Lancer	2357	187	2544	3505										
Lancer, 4d	2463	195	2658	3605										
Cust. Royal														
Sedan, 4d	2394	190	2584	3520										
Lancer	2458	188	2654	3505										
Lancer, 4d	2565	203	2768	3608										
Convertible	2664	210	2873	3630										
Sta. Wagons														
Suburban, 8 cyl.	2272	180	2452	3455										
Suburban, 8 cyl.	2372	188	2560	3605										
Sierra, 6 p.	2481	196	2677	3725										
Cust. Suburb.	2492	197	2689	3725										
Sierra, 8 p.	2579	204	2783	3725										

* Prices do not include delivery and handling charges.
† F. O. B. coastal port of entry.

† Six cylinder models are \$93 less than 8 cylinder models.
‡ Six cylinder models are \$96 less than 8 cylinder models.

† Six cylinder models are \$92 less than 8 cylinder models.

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A Genuine Ford dry charge battery's acid is packaged separately and added *when you sell it*. That means no power loss in storage and a longer life in your customers' Fords. Added to that, a Ford battery has a larger "acid bank" which means even longer battery life.

Now you can stock as many
Ford batteries as you've got room
for...because you never have to
"trickle charge" them!

You can forget those bothersome monthly battery inspections completely! With Ford's new dry charge battery, you can stock as many as you want and have each one factory fresh when you sell it.

And it's a wise idea to stock plenty. This month national advertising in LIFE, LOOK, COLLIER'S and THE SATURDAY EVENING Post will tell your customers this longer-life story. Ford owners will be asking you for the new dry charge Ford batteries. Make sure you have plenty on hand.

GET THIS SIGN . . .

Display a Genuine Ford Parts oval and bring in more Ford business. Ford owners watch for it. Mail the coupon for the full story.



PARTS AND SERVICE SALES PROMOTION DEPT.

Ford Division, Ford Motor Company, Box 658, Dearborn, Mich.

Please send complete information telling me how independent garages can get a Genuine Ford Parts sign. I'd like to cash in on this, too!

FIRM NAME _____

INDIVIDUAL'S NAME _____

ADDRESS _____

CITY _____ STATE _____ H

Power Steering . . .

Continued from page 47

Rotate the steering wheel back and forth from extreme right to extreme left until air begins to sputter out of the hose. Stop the engine and reconnect the hose, and add oil to fill the reservoir to the level mark.

Restart the engine, let it idle, turn wheels back and forth as mentioned above until all bubbles

disappear in the reservoir. Recheck the level and install the cover.

Bleeding the System: When the fluid gets low on the unit that has been dis-assembled, air will get in and cause the wheel to kick back. To bleed the air proceed as follows: Be sure the reservoir is full, then loosen the bleed screw on the

Pitman shaft end cover. Start the engine and turn the steering wheel from full right to full left and back again several times. The trapped air will escape past the bleed screw. When no more air escapes tighten the screw and recheck the level.

Checking the Steering Effort

With the engine running, and the hand brake set, hook the spring pull scale to the rim of the 18 inch steering wheel and measure the pull required and turn it to a 3 inch arc at a straight ahead position. The pull should be between $3\frac{1}{2}$ and $4\frac{1}{2}$ lbs on a drive floor.

Checking the Pump Operation: Connect a 1,000 lb per square inch gage into the line running from the pressure side of the pump to the unit. When the engine reaches operating temperature, turn the wheels full right or full left. The gage should read between 925 and

Why timing chain and sprockets should be replaced on every engine overhaul



Use LINK-BELT— world's finest original equipment line...

If your customer hopes to maintain the hp he pays for in today's high-compression engines, accurate valve timing is an absolute "must." Explain the performance-killing timing lag that comes from chain and sprocket wear. Then install Link-Belt—the timing chain with anti-whip, anti-back-bend segmental bushings. It's the world's finest original equipment line—standard on many 1956 models. Distributed by leading jobbers, in sizes to fit any engine designed for chain.



LINK-BELT

TIMING CHAIN AND SPROCKETS
LINK-BELT COMPANY,
220 S. Belmont Ave., Indianapolis 6, Ind.
Warehouses in Principal Trading Areas.



"Everytime I try to put it together,
I have a few pieces left over!"

950 psi. If it does not, close the valve on the gage and so shut off the oil delivery to the steering gear. If now the pressure does rise to 925 to 950 the pump is ok and the unit is faulty. On the other hand, if the pressure does not rise the pump is not working correctly.

Trouble Shooting

If hard steering is noted in the straight ahead position, the trouble is likely due to a binding steering linkage. To check, disconnect the linkage at the Pitman arm and check the pull required to

(Continued on page 76)



Accessories . . . a full line to increase the range of applications of your Black & Decker Drill: Assortment of grinding and buffing wheels, horizontal and vertical drill stands, hole saws, feed screw attachment, right angle drilling attachment, wire wheel brushes.

We don't buy motors
—we build them!

The heart of your electric tool is the motor—completely built by Black & Decker! All the power you need and then some — because each motor is built for a specific tool and the job it must do! B&D motors always stand up!



Black & Decker electric drills mean low operating cost—more convenience, less noise—and they're

POWER-BUILT

TO LAST!

The power, speed and accuracy of Black & Decker Drills mean faster, better repairs and lower costs. The Black & Decker-originated pistol-grip and trigger-switch, the lightweight, *balanced power* GUARANTEE reduced operator fatigue! And unexcelled workmanship throughout makes your Black & Decker Drills thoroughly dependable, inexpensive, "low maintenance" shop workhorses.

32 models offer you a wide selection of drills from $\frac{1}{4}$ " up . . . for intermittent or continuous heavy-duty drilling! No matter what your requirements—you can't beat Black & Decker! Call your B&D distributor or write for free catalog to: THE BLACK & DECKER MFG. Co., Dept. 3109, Towson 4, Md.

Service . . . one of 44 Black & Decker factory service branches is located "next door" to you. Staffed by experts to give fast, efficient service, genuine replacement parts.



Look in the Yellow Pages under "Tools-Electric" for Nearest Distributor

Black & Decker®
PORTABLE ELECTRIC TOOLS

Power Steering Continued from page 74

pull the steering wheel through the midpoint straight ahead position. If the scale reads over $1\frac{3}{4}$ lbs, loosen the Pitman arm shaft to sector adjusting screw in the Pitman arm shaft cover just below the bleed screw. Then if the pull required cannot be reduced to between $1\frac{1}{4}$ and $1\frac{3}{4}$ lbs, the gear must be removed from the car, dis-

assembled, and thoroughly checked.

If steering is slow on the return to the center position the trouble is likely due to low tire pressure, incorrect steering geometry, tight linkage or improperly adjusted Pitman shaft or sometimes it could be binding of the control valve due to the assembly being improperly mounted. In which

case, loosening the screws holding the valves assembly to the gear will permit the valve to center itself. Then retighten the attaching screws to 15 to 20 ft lbs.

Sticking Control Valves

The valve can be removed and freed-up without disturbing the rest of the mechanism. In the case of a sticking functuating lever, this is accessible when the valve assembly has been removed. However, the pre-load on the ball nut or the upper worm thrust bearing may be too great. The gear must be removed and dis-assembled to check and correct. Momentary increase and effort when turning wheels fast, or excessive wheels kickback indicate that these troubles may be caused by air in the system. In which case bleeding the gear and checking the fluid level will correct. If this is not effective, check the steering linkage in the Pitman shaft sector adjustment. If these remedies fail it will be necessary to remove the assembly from the car and the upper worm thrust bearing should be checked for being too loose.

TORQUE WRENCHES INSIST ON PERMANENT ACCURACY

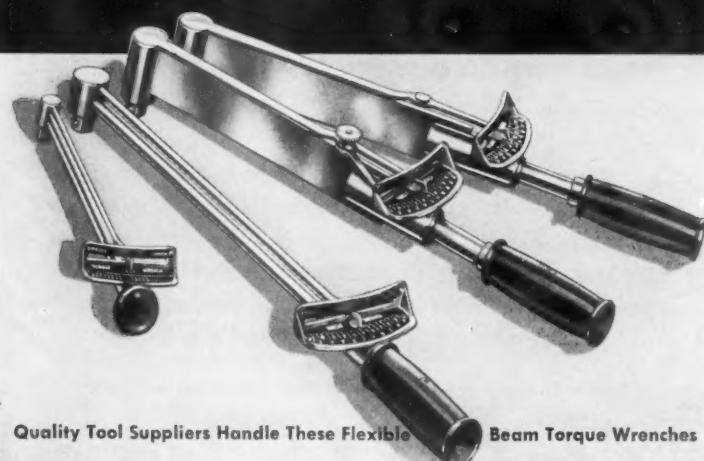
Anything less than permanent accuracy is dangerous in a torque wrench—can be more dangerous than no torque wrench at all. For absolutely unvarying accuracy depend on the flexible beam "gauge test" type torque wrenches covered by U. S. Patent numbers: D-112,888 2,283,707 2,385,591 and identified by this familiar trade mark

Free...

Engine torque specification and application tips on: Automotive • Truck • Tractor • Marine • Misc. Write "Torque Wrench" Dept. 2000, Addison, Illinois



Look for these numbers and this trade mark, they are your assurance of long life and indestructible design.



Quality Tool Suppliers Handle These Flexible

Beam Torque Wrenches

Hard Steering When Parking

This trouble can be due to a loose pump belt, low fluid, lack of steering linkage lubrication, low tires, tight adjustment of the Pitman arm, the ball nut or the upper thrust bearing too tight, insufficient oil pressure. If this be the case apply the procedure outlined for Checking Pump Operation.

Steering Wheel Surges

This trouble is due to a loose pump belt. Check by depressing it in the center. It should deflect no more than $\frac{1}{4}$ inch under a 5 to 7 lb force. There is a sided hole in the pump support to permit movement of the pump to tighten the belt.

Car Keeps Trying to go to One Side: This trouble is more than likely due to misalignment of the front end and is not the fault of the power steering unit.

(Continued on page 80)

PICK UP



HAUL



DUMP



* EASIER • FASTER • MORE ECONOMICAL

Conventional methods of handling spent materials, scrap, rubbish and other plant waste take a lot of time, work, manpower and equipment. A costly, inefficient operation at best.

But with Borg-Warner's Load Lugger System, waste disposal is easy, fast, economical. One Load Lugger equipped truck, plus detachable Load Lugger containers, does the work of several conventional trucks. That greatly reduces investment in equipment, cuts manpower requirements, lowers operating and maintenance costs.

With specially designed containers, the Load Lugger System handles all types of materials—solids, liquids,

gases. Hauls from $1\frac{1}{2}$ to 14 cubic yards of material. Takes loads to 18,000 pounds.

What's more, the Load Lugger can be used to self-load and haul heavy equipment, pipe or other long or bulky pieces. Flat bed hoist bodies mount on any truck chassis of suitable capacity, with controls installed in cab for easy, one-man operation.

A product of B-W's Ingersoll Kalamazoo Division, the Load Lugger System is another typical example of Borg-Warner's "design it better—make it better" tradition. In this way, with hundreds of products, Borg-Warner serves American industry every day.

Almost every American benefits every day from the products of

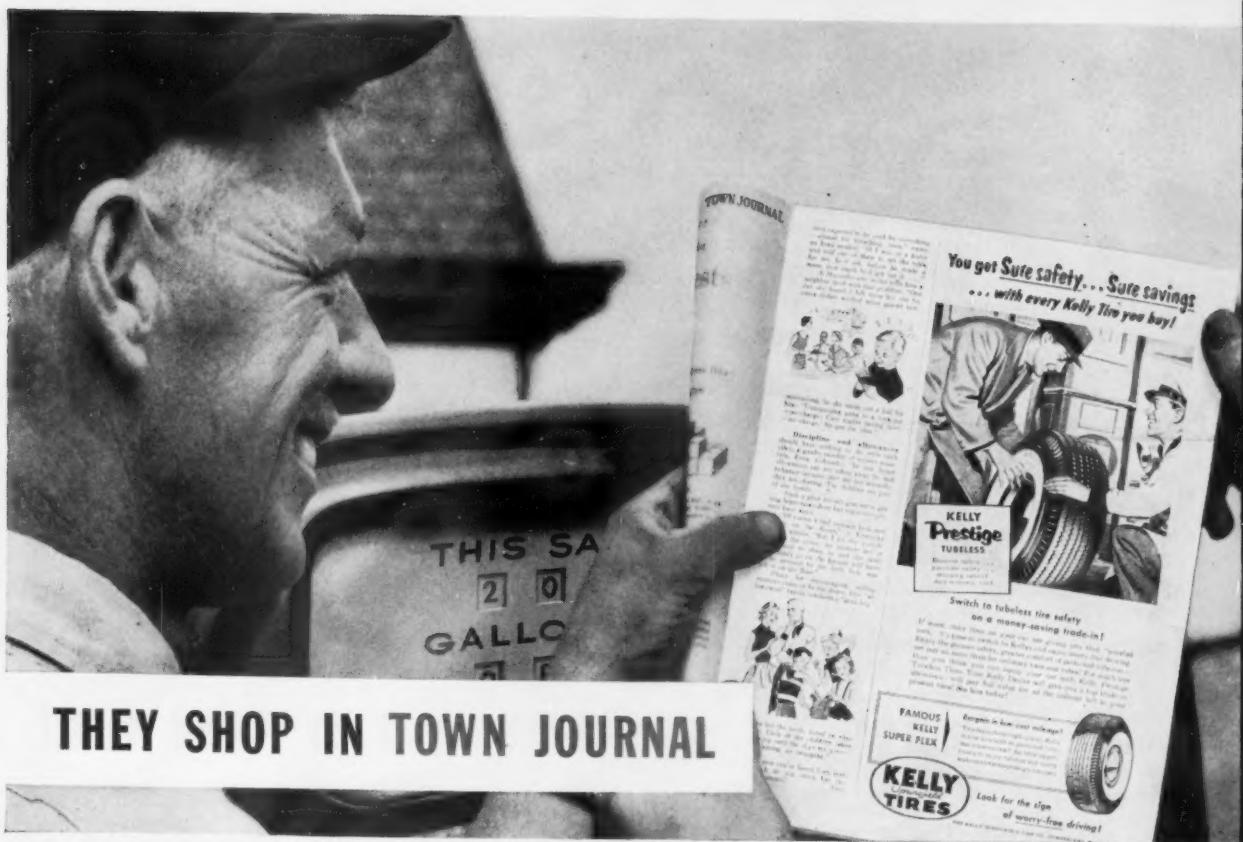
BORG-WARNER



THESE UNITS FORM BORG-WARNER, Executive Offices, 310 S. Michigan Ave., Chicago. DIVISIONS: ATKINS SAW • BORG & BECK • BYRON JACKSON CALUMET STEEL • DETROIT GEAR • FRANKLIN STEEL • HYDRALINE PRODUCTS • INGERSOLL CONDITIONED AIR • INGERSOLL KALAMAZOO • INGERSOLL PRODUCTS • INGERSOLL STEEL • LONG MANUFACTURING • MARBON CHEMICAL • MARVEL-SCHEBLEIN PRODUCTS • MECHANICS UNIVERSAL JOINT NORGE • PESCO PRODUCTS • ROCKFORD CLUTCH • SPRING DIVISION • WARNER AUTOMOTIVE PARTS • WARNER GEAR • WOOSTER DIVISION YORK • SUBSIDIARIES: B-W ACCEPTANCE CORP. • BORG-WARNER INTERNATIONAL • BORG-WARNER, LTD. • BORG-WARNER SERVICE PARTS • LONG MFG., LTD. MORSE CHAIN • MORSE CHAIN OF CANADA, LTD. • REFLECTAL CORP. • WARNER GEAR, LTD. • WESTON HYDRAULICS, LTD.



THEY SHOP IN FARM JOURNAL



THEY SHOP IN TOWN JOURNAL



KELLY

sells the whole Countryside Market... Town and Farm

The Kelly-Springfield Tire Company gives its dealers potent sales support with advertisements in the Countryside Unit, the winning combination of Farm Journal and Town Journal. Why does Kelly-Springfield use the Countryside Unit?

Because more than 5 million copies of this selling package reach and influence the biggest single market for automotive parts and services in America—countryside America.

More than 22 million families live beyond the metropolitan centers in the rich countryside market. They own and operate almost half of all the automobiles in the U.S.A., 65% of the trucks, and 92% of the tractors. They account for half of all the service work performed. In business to supply, service and maintain this vast army of machines are 73% of the nation's car and truck dealers, almost half of the independent repair shops, and 58% of the automotive jobbers—all in countryside America.

In this important market, the Countryside Unit is unequaled by any other national publication in penetration and merchandising power. That's why advertisers find it a gilt-edged investment. Jobbers, local dealers, and garage owners like it, too, because they count on it to presell their best prospects. After all, the Countryside Unit saturates town and rural areas like a local newspaper, giving them the local support that pays off in greater volume, higher profits.

No wonder Kelly dealers say:

- As far as I'm concerned, advertising in Town Journal and Farm Journal is one of the best sales aids our company gives us. *George Sikora, George's Tire Shop, Torrington, Conn.*
- I'm sure most of my potential customers read either Town Journal or Farm Journal. Naturally, our advertising there is bound to pay off. *Stanley T. Cree, Cree Tire Shop, Dover, Ohio*
- No question about it, Countryside Unit advertising does a great job of bringing in new customers and making new friends. *Thor Christensen, Thor Christensen Co., Sioux Falls, S.Dak.*

People like to read advertising in magazines



PUBLISHED MONTHLY BY FARM JOURNAL, INC. • PHILADELPHIA 5, PA.
GRAHAM PATTERSON
Publisher

RICHARD J. BABCOCK
President





THE BOLIDE, French for meteor, is the new name for this Arnolt-Bristol 2 litre sports car with touring equipment. Passenger comforts stressed in this model include all-weather top and side curtains, a curved safety-glass windshield, adjustable anatomic "bucket" seats, and an easy-to-read instrument panel highlighting the interior. Recently introduced to the sports car field, the Arnolt-Bristol Bolide is powered by a six cylinder engine which has a compression ratio of 9:0.1 and develops 130 hp.

Mr. Dealer:

Customer Satisfaction makes **MUSTANG** Easy to Sell!

The Management
of Mustang Rebuilders, Incorporated
and International Road
Carriers, Texas

Dear Sirs:

This letter is written in appreciation for "Service Rendered".
From your firm you get the MUSTANG, reconditioned engine. This
engine gives you the same performance as the original "V8" engine.
Motorists rate these engines as the best in their class. We feel qualified to
say that our engines are second to none.
As far as opinion goes, we have no equal.

I am a Salesman driving 30,000 to 40,000 miles per year.
These engines are built city and country.

My first experience with the MUSTANG came when I purchased a
new car I have owned.

Dollars mean a lot to me. I have found that MUSTANG delivers more
for those dollars than anything else I have used. Mile for mile,
dollar for dollar, MUSTANG really has what it takes.

That is from economy.
That is from economy.
That is from economy.

Very sincerely,
John DeWitt
St. Louis Press

**ORIGINAL
OF THIS
UNSOLICITED
LETTER,
AVAILABLE
AT FACTORY**

**There's \$10.00
Clear Profit per Shop Hour
When You Sell and Install
One **MUSTANG**...**

**YOUR GUARANTEED BIG-
PROFIT EXCHANGE ENGINE**

Yes! WE WANT MORE INFORMATION ON THE MUSTANG PROFIT DEAL!

FIRM NAME _____ ADDRESS _____
CITY & STATE _____ YOUR NAME & TITLE _____

Power Steering . . .

Continued from page 76

Noises from the Steering Unit frequently appear as rattles, chuckles or hisses. Aside from adjustment of the Pitman shaft sector to the rack there is not anything that can be done to obviate the noise. In other words a slight hissing from the valve while parking is normal and replacement of the valve will not remove the noise. A slight rattle on turns is caused by increased lash between the ball nut and the worm when off the high point. This lash must not be removed.

Mullery to Head Chicago Committee

Don C. Mullery, vice-president of the Chicago Automobile Trade Association, has been named chairman of the executive show committee of the 1957 Chicago Automobile Show to be held January 5 through 13 in the International Amphitheater.

Mullery, a veteran automobile dealer, is head of Broadway-Ford, Inc., 4930 Broadway, Chicago.

C. J. McCorkle, president of the sponsoring association, announces that the show committee headed by Mullery will be composed of James F. McManus, Jr. (Chevrolet), Jerry H. Cizek (Chrysler-Plymouth), Walter A. Gerwig (Buick), Max S. Evans (Oldsmobile) and Walter Schroeder (Studebaker). Edward L. Cleary, executive vice-president of the CATA, will continue as show manager.



HERE'S PROOF!

That Graham's Have the TOOLS, Experience, and Trained Mechanics to Do the Job!



Average Years Experience Per Man	9 1/2 YRS.	Average Value Personal Tools Per Man	\$1204
Plus \$30,000 Dollars of Major Tools & Equipment of Graham's to Guarantee You Satisfaction — Bring Your Car in Now!			
FREE ESTIMATES! Budget Terms Available!			

GRAHAM

MOTOR
SALES CO.

Graham Motor Sales Co., Bloomington, Ind., has the formula for bringing in service customers — hard-hitting advertising, experienced mechanics, plus a wide assortment of Snap-on tools.

Graham Motor Sales makes service pay with ads, men and *Snap-on* tools

Look at these *Snap-on* cabinets and tool boxes and you can tell Graham mechanics are well equipped to handle today's complicated service work — and really do a good job. Graham is proud of its talent and tools — and *Snap-on* is proud to be part of this great service team.

Do the men in your shop know the extra pay-boosting advantages of being completely equipped with efficient, time-

saving tools? If not, they can get real help from the *Snap-on* man. On his regular calls, he can work with each man on an immediate selection of tools. He can add tips on tool use. He can arrange credit plan terms to make it easy for mechanics to own the tools and tool cabinets they need. And these same easy terms are available to you for needed shop equipment. Ask your *Snap-on* man for further details.

*Snap-on is the trademark of Snap-on Tools Corporation.

SNAP-ON TOOLS CORPORATION

8036-I 28th Avenue • Kenosha, Wisconsin



Nothing beats this extra-rugged

to renew



*it's original equipment
on more cars, trucks
and buses than all
other makes combined.*



Packard "404" low tension cable electrical performance!

Put the electrical system of a customer's car back in new car shape and you've got a happy customer. So, why replace worn cable with a substitute when you can *renew* performance with Packard "404" low tension cable?

That's right—*renew!* Use the cable that withstands cable-damaging conditions as no

other cable can, because of rugged "404" insulation—developed by Packard research specifically for automotive use.

This is the same low tension cable that is the largest selling original equipment cable of its kind.

Because of this tremendous volume, initial cost is low. And,

because Packard offers you the fully packaged and complete line, you get the extra advantages of a single source—lower accounting and inventory costs, and quick deliveries.

It pays to stock the fast-moving cable. It pays to stock Packard Cable, the original equipment line that outsells all other makes combined.



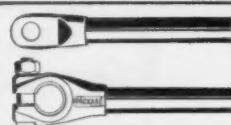
FOREMOST BUILDER OF
AUTOMOTIVE WIRING

Packard
REG. U.S. PAT. OFF.
TRADE MARK

Packard Electric Division, General Motors, Warren, Ohio



A GENERAL MOTORS PRODUCT — A UNITED MOTORS LINE
DISTRIBUTED BY WHOLESALERS EVERYWHERE



BATTERY CABLES

Special design gives full starting power, extra flexibility and strength. Additional features at no extra cost make replacement easier, deliver top electrical performance.



LOW TENSION CABLE

Stranded copper conductor covered with tough coat of Packard "404" plastic. Small diameter, highly flexible and wear resistant.



HIGH TENSION IGNITION CABLE

Packard "440" and TVRS high tension cables continue to be used on more vehicles than any other similar-purpose cables.

Meteor Injector . . .

Continued from page 49

a high degree of atomization. The throttle is mounted at the air horn of the unit so that the pressure differential between the atmospheric air pressure and the manifold depression is fully utilized to provide the forces which give both control and atomization.

The schematic diagram showing a cutaway portion of the injector

illustrates the relative positions of the throttle and the air valve with the basic principles of the linkage which controls the nozzle. Air which passes the throttle impinges upon the air valve depressing it so that the combined velocity and density of the air are in effect measured by the position of the air valve at all speeds and loads.

Motion is transmitted from an arm moving with the air valve shaft, through linkage to a pivoted or fulcrum motion to the control arm which regulates the flow of fuel through the nozzle.

Fuel-air ratio is determined by the linkage motion and is established at the factory. The diagram illustrates a simple principle by which the mixture ratio is altered during warm-up of the engine by changing the position of the fulcrum point defined as "ratio lever." Positioning of this lever, which provides the enriched mixtures for starting and warming up of the engine, is accomplished by either manual control or by an automatic thermostat device. Starting mixtures are obtained by depressing the accelerator which causes the nozzle to spray a priming mixture.

When the ignition is off, the air valve returns to a shut-off position, as the flow of air ceases. This shuts off the nozzle and retains pressure in the fuel section.

Gasoline enters the injector under pressure of the fuel pump and thence through a pressure regula-

NOW...sell this amazing new KEY TO SAFER DRIVING



...EVERY PARENT IS A PROSPECT!

The new Key-Matic Auto Speed Control safely ends the 'fatal rate' of speed at owner's will—he keeps the 'key' when the car's out of sight! Be sure KEY-MATIC Auto Speed Control is in your store when the calls come in!

ADVERTISED IN
The Saturday Evening
POST

Write Today For Complete Catalog Information!

Key-Matic AUTOMOBILE SPEED CONTROL

- Locks and Limits Speed Automatically
- Limits Speed Only When Owner Desires
- Never Disturbs Normal Car Operation
- Simple Installation, Operated Inside Car
- Tamper-Proof, No Upkeep Cost

There isn't much to see
in a small town, but what
you hear makes up for it.

tor which delivers the fuel to the nozzle under a pressure of one psi.

Fuel passes through the metering chamber and through the metering orifice which is so constructed that it is self-clearing of any small dirt particles in the gasoline. The metering orifice is 5/64 in. diam. After being metered in proportion to the air which controls the air valve, the fuel is injected into the swirl chamber where the atomizing and emulsifying stage takes place.

Air is admitted at high velocity through slots giving a rotary pattern and the swirling results in emulsifying the gasoline. Because the nozzle next sprays the emulsion into the manifold in the path of the air entering the manifold at high velocity, high pressure differentials develop which rise to 8

(Continued on page 86)

Specialists in Highway Safety Products for Over 10 Years

MINNESOTA AUTOMOTIVE, INC.

1101 N. Front Street

Mankato, Minnesota



"Motors need house cleaning too—and Quaker State Detergent Additive does the job!"

Top quality Quaker State Detergent Additive does a two-way job: it cleans up sluggish motors, *and* it means greater profits for you. For Quaker State Detergent Additive does its cleansing, engine-freeing work quickly, easily and effectively—in a way that brings motors

back to full power, and satisfied customers back to you. It solves those "stop-and-go" driving problems such as sticking hydraulic valve lifters, sludge deposits, poor compression, rough idling. It's good business to sell Quaker State Special Detergent Additive now!



QUAKER STATE OIL REFINING CORPORATION, OIL CITY, PA.

Member Pennsylvania Grade Crude Oil Association



THE NORSEMAN, Chrysler Corporation's famous "Idea Car," is shown at left. The car was aboard the ill-fated "Andrea Doria," Italian liner that sank off the New England coast recently. Several years in building, the car was on its way to America when the "Andrea Doria" and "Stockholm" collided.

Meteor Injector . . .

Continued from page 84

to 10 lb of atomizing pressure at cruising speeds. Pressure drops and spray pattern are controlled as the metering takes place so that as much as possible of the incoming air is mixed with the atomized fuel-air mixture which has been already prepared, so as to give a fog like mixture to the cylinders.

Die Casting

Main body of the Meteor is a die casting with another die casting comprising the fuel tank. This is a sealed unit containing a simple pressure regulator and a vent to release vapors from the gaso-

The trouble with being a leader today is that you can't be sure whether the people are following you or chasing you.

YOURS...FREE!

this famous
ELECTRO-FORGE
ELECTRIC
Knife
Sharpener

... comes packed right in with
Murray's popular

**GOLD SEAL Worm Drive
Hose Clamp Selection No. X-200**

...A Complete Fall Stock

Now, with your purchase of just 200 of the world's finest-made worm drive hose clamps . . . Murray's GOLD SEAL . . . you will receive . . . *absolutely free* . . . what we believe to be the world's finest-made electric knife sharpener . . . ELECTRO-FORGE. Sharpens knives to factory keenness. UL Approved. Air-cooled motor never needs oiling. Long life abrasive wheel. Rich-looking turquoise blue color. Many other quality features. Worth \$14.95 . . . but free to you . . . and packed right in with the X-200 GOLD SEAL Worm Drive Hose Clamp Selection. This remarkable offer is good for limited time only . . . so order from your jobber today.

MURRAY
CORPORATION
TOWSON-4, MARYLAND

line while maintaining operating pressure in the chamber. Other than the two die-cast parts, the remainder of the parts are about equally divided between screw machine parts and stampings. Stainless steel is freely used wherever parts are in contact with the gasoline and any other steel parts are protected by either cadmium or chrome plate. Brass parts are principally used in contact with gasoline. They are also used for hubs or bearing surfaces.

Saaty just recently brought out its new model 200 injector for V-8 engine installations. The firm has been producing its Model 100 for in-line engines since 1953. The new model 200 Meteor injector is made in an L-shape with the air horn in a horizontal position. Saaty has developed a special air filter for the new model so as to conform with modern low hood designs.

AMERICA'S FIRST *SILENT* SNOW TIRE!

Even on dry pavement—no droning—no moaning—no groaning.

New Exclusive Armstrong Silent Tread Design Does The Trick



Multiple rows of staggered grip-blocks present a continuous smooth surface on dry pavement which eliminates road noise — yet this tread digs into snow and mud giving better traction than former snow treads. In fact, new Armstrong Silent Storm King Tires are *so silent* they can be left on the car all year round!

IT HAS ARMSTRONG'S FAMOUS
**"OUNCE OF
PREVENTION", TOO!**

You'll never hear this tire . . .
but you sure will
hear a lot about it!

And so will your customers! Armstrong "Silent Storm King" tires are backed by hard-hitting advertising in leading magazines, and on TV!

Armstrong "Silent Storm King" is the first truly silent snow tire, with the highest level of safety ever developed. That's what your customers want!

Stock amazing Armstrong "Silent Storm King" tires — place your order now!

UNCONDITIONAL LIFETIME
ROAD HAZARD GUARANTEE

ARMSTRONG **SILENT**
STORM KING TIRES

THE ARMSTRONG RUBBER COMPANY, HOME OFFICE, WEST HAVEN, CONNECTICUT



**EVERYTHING
you need
for spraying any
auto finish
or coating**

Name your job...

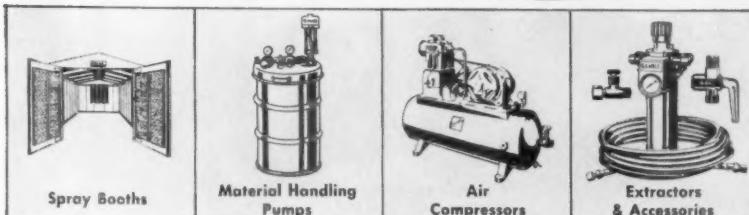
in the Binks line you'll find everything needed for spray application of factory-quality body finishes...undercoatings...flocking materials...cleaning solvents...car wash water.

Name your requirements...

fender and panel work or refinishing entire cars and trucks on a production basis, you'll find Binks outfits tailored to your needs—spray booths, drying equipment...all the accessories.

Nationwide service...

no costly delays—assistance on painting problems or service on Binks spray guns and equipment is never further than your telephone. Parts are available from more than 6000 Binks jobbers.



These are but a few of over 1100 items in Binks complete line

...each product is backed by 60 years experience and is built to function perfectly with other Binks equipment. That's why professionals who demand reliable performance—buy Binks all the way. Ask your jobber to show you the Binks line or write direct to the address below for complete information.

Ask about our spray painting school
Open to all...NO TUITION...Covers all phases

Binks Manufacturing Co.

3124-34 West Carroll Ave., Chicago 12, Ill.

REPRESENTATIVES IN PRINCIPAL U.S. AND CANADIAN CITIES • SEE YOUR CLASSIFIED DIRECTORY

Body Parts List . . .

Continued from page 65

Willys

689750—Hood Assembly . . .	N.P.A.
673337—Hood Hinge Assembly, L . . .	4.00
689771—Front Fender, L . . .	27.00
810659—Radiator Support Assembly . . .	5.75
689742—Grille Upper & Lower Panel Assembly . . .	50.00
676449—Hood Lock Upper Assembly . . .	1.49
676450—Hood Lock Lower Assembly . . .	1.55
676541—Roof Panel—Super Deluxe, 4 dr.	175.00
678265—Roof Panel—Custom, 4 dr.	114.06
676227—Roof Rail & Drip Moldings, L—4 dr.	15.75
676405—Front Outer Wheelhouse, L—4 dr.	16.93
684543—Body Side Frame, L—4 dr.	66.71
676955—Center Body Pillar, L—4 dr.	14.50
687281—Front Floor Pan, 4 dr.	40.00
687279—Front & Rear Floor Pan Assembly, 4 dr.	154.00
809433—Gas Tank, 4 dr.	16.50
676145—Rear Quarter Panel & Extension, L—4 dr.	38.00
676434—Rear Wheelhouse Panel, L—4 dr.	30.25
676265—Rear Quarter Lock Pillar, L—4 dr.	6.75
678586—Rear Deck Lid, 4 dr.	25.50
676005—Rear Deck Lower Pan, 4 dr.	5.00
678469—Rear Deck Hinge Assembly, L—4 dr.	3.75
676253—Rear Deck Lid Lock Assembly . . .	2.50
684208—Front Door Shell, L—4 dr.	48.00
687406—Front Door Outer Panel, 4 dr.	10.00
684205—Rear Door Shell, L—4 dr.	47.00
689737—Rear Door Outer Panel, 4 dr.	N.P.A.

N.P.A. = No price available

In New Assignment

Appointment of W. L. Vande Water as executive assistant to the general manager in charge of dealer relations has been announced by Philip J. Monaghan, vice president of General Motors and general manager of the GMC Truck and Coach Division.

Vande Water has been with GMC Truck for the past six years, his most recent position being national fleet sales manager.

"I tell ya-
It takes ALL of 'Em!"



...IT TAKES THE **WHOLE** TO **CRACK** THE OIL MILEAGE

COMPARISON PROVES IN A PISTON RING, TOO

	Made of Electralloy Finest Electric Furnace Process	Alitized Quick-Seating Top Fire Ring — Resists Corrosion and Wear	Cam Shaped Chrome Armored Steel Rails — Made to Fit Cylinders Perfectly	Reverse Loop Expander — Uniform Pressure on Entire Circumference of Ring	Top Chrome Rings Available
LEAK-PROOF	YES	YES	YES	YES	YES
RING "A"	NO	NO	NO	NO	YES
RING "B"	NO	NO	NO	YES	YES
RING "C"	NO	NO	NO	NO	YES
RING "D"	NO	NO	NO	NO	YES

CHROME
CONTROL

LEAK-PROOF
PISTON RINGS

- Balanced for positive control
- For less blow-by • For quicker seating • For quicker profits



McQUAY-NORRIS MANUFACTURING CO.
ST. LOUIS...TORONTO

LARGEST PRODUCER OF SMALL RINGS IN THE AUTOMOTIVE INDUSTRY

THE TEAM! THE CHARGE BARRIER



The famous Torsion-Tight
aviation fire ring.

The new DUO oil-compression
ring with Chrome-Armored
steel segment.

The new "400" oil ring
— the most efficient oil ring
on the market — with Chrome-
Armored steel segments.

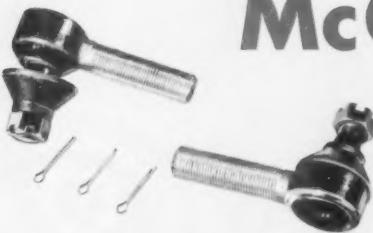
GUARANTEED!
to out-perform any other
ring set in the hard to hold
jobs regardless of kind,
design or price!

1st Line Quality



Complete
Line Service

McQUAY-NORRIS



PISTON RINGS • PISTONS • WATER PUMP
PARTS • PINS • SILENT-U SHACKLES •
VALVES • BUSHINGS • BEARINGS • SLEEVES
BOLTS • WHEEL SUSPENSION PARTS

McQUAY-NORRIS MANUFACTURING CO.
ST. LOUIS...TORONTO

Management Clinic . . . Continued from page 56

"When you look at some leases signed by . . . garages . . . you wonder how they managed to stay in business as long as they did. More than half the cases of financial troubles I have handled in the past few years never heard of such a thing as occupancy ratio. They signed leases which in some cases brought this ratio to as high as fifty per cent during some months with no chance to average out. No business in the world can stand that," says an attorney who was formerly vice-president in charge of real estate in one of the nation's larger banks.

Here are the things the experts say you should know and think about before signing a new lease or renewing your present one:

First, your cost of occupancy ratio. This is the total cost of occupying your place of business divided by your sales. For example, if you operate a small garage with sales of \$15,000 a year and pay a flat rental of \$1,200 a year with no liabilities other than rent under your lease your cost of occupancy ratio will be 1,200 divided by 15,000, or eight per cent. But if your lease makes you liable for repairs to the building or other expenses these have to be added to your rent and your cost of occupancy ratio may go up rapidly. In

Bill's case these extra expenses more than doubled it during his first year.

Other items that must be included in your cost of occupancy are the depreciation on any alterations you make to the building at your own expense. This depreciation must be at a rate which will completely amortize it within the

life of your lease. The same is true of fixtures such as benches, cabinets, shelving, etc., which for any reason, including the real estate laws in your state, can not be removed. The laws governing this vary from state to state so the safest plan is to consult an attorney before making such installations.

Accountants are not agreed on whether or not the cost of liability

(Continued on page 94)



TWIN COUNTER MERCHANDISER
Assembled from 12-volt 3-For-All Kit and 6-volt 3-For-All Kit.
Covers practically all 6v. and 12v. vehicles with minimum sales active stock.



The wide range of application of these precision engineered, quality built Voltage Regulators makes them easier to stock and sell. Millions are in use as original equipment. Now, there's a new 3-For-All Kit, with only 3 Regulators, to fit practically all cars and light trucks with 12v. systems. This handy, compact, counter merchandiser can be displayed separately or set up in combination with the popular 3-For-All 6v. Kit. All these famous Regulators are competitively priced to give you big replacement service volume. American Bosch, Springfield 7, Mass. A Division of American Bosch Arma Corporation.

AMERICAN BOSCH



Management Clinic . . . Continued from page 93

insurance on the premises should be charged to the cost of occupancy, but the trend appears to be to include it. The same is true of fire, wind and flood insurance on the building if you are responsible for repairs under your lease.

Hold Tenants Responsible

An increasing number of land-

lords are demanding leases that make the tenant responsible for all or certain repairs. Before signing such a lease it behoves you to find out the condition of the structure, plumbing, wiring, etc. Be sure to include sills, roof, and joists in such a check. If there is an architect, engineer or reliable general contractor in your town

it will pay to engage them to make the check for you. Their fee in small towns rarely exceeds \$25 and is frequently as little as \$10.

Failure to make such a check cost a western garage operator over \$1,000 when the sills under his building gave way as a result of termite infection and had to be replaced during the third year of his ten year lease.

Worn-out plumbing, wiring off which rats have chewed the insulation and small structural repairs are far more apt to be required, but their total cost can amount to a substantial amount during the life of your lease. They also impose a hidden loss from frequent interference with your work.

Another thing to be carefully watched in such clauses is that they are not so phrased they make you responsible for special assessments against the property for street and sewer repairs. The experts say you will be wise to reject such a lease under any conditions.

Have your proposed lease checked by an attorney. If he advises liability, fire, flood, and wind insurance under its terms, check with your insurance broker and find out exactly how much these will cost you. Add this plus a reasonable allowance for repairs you will be liable for under the lease to your rent, and you can make a reasonably accurate estimate of the cost of occupancy. If you have engaged an expert to check the condition of the property, his report should include a reliable estimate of the probable cost of maintenance.

Your rent may not be a fixed amount each month. On percentage leases calculate two cost of occupancy ratios; one based on the lowest reasonably probable figure you will have to pay, the other on the highest.

All cost of occupancy estimates should be made on an annual basis. If you want to reduce the figures to a monthly basis divide by twelve.

Your method of calculating sales is important. It should be based on what you have done, not
(Continued on page 96)

Goes Where You Go!

NIEHOFF
TSC-15
PORTABLE
REGULATOR TESTER

- Rolls right up to the car at handy fender height. Strong, lightweight aluminum frame. Tool "caddy" tray.
- New easy-to-read meters test both 6 and 12 volt systems.
- Step-by-step picture manual shows how to troubleshoot regulators and generators.

Roll up bigger ignition profits . . . faster, easier, *surer!* With this new easy-gliding stand you lose no time looking for a place to put the tester . . . no danger of dropping or damage.

Test units on car regardless of battery condition . . . regulator, generator, current draw of all units except starter, voltage drop in wiring.

The big eye-angle meters feature a separate scale for each voltage range. Rear compartment carries Niehoff's new trouble-shooting manual. Illustrated step-by-step, it shows you how to hook-up and how to make all tests on all popular systems. Included with both TSC-15 and T-15.

\$6500
Dealer Price

T-15 TESTER without stand. Includes leads, clips and troubleshooting manual. (Shipping weight approx. 7 lbs.)

Dealer Price \$49.50

C. E. NIEHOFF & CO.
4925 LAWRENCE AVENUE, CHICAGO, ILLINOIS

Warehouses: 250 W. 54th Street, New York 10, New York • 1631 Fairmount Avenue, Philadelphia, Penna. • 254 Brighton Avenue, Boston 34, Mass. • 2715 Main Street, Dallas, Texas • Branches: 1330 W. Olympic Blvd., Los Angeles 15, Calif.

Here's why NEW "Jeep-Jack" is taking the country by storm



* Costs only **\$29⁹⁵**

* Weighs only **44 lbs!**

From Maine to Texas enthusiastic new Blackhawk Jeep-Jack owners call it the *most amazing mechanical one-end lift they've ever used!* You too will like its sensational features — its low, low price. At \$29.95, you can afford all the jacks you need. And Jeep-Jack's very portable 44-pounds makes it *perfect* for road service — *unparalleled* for swift wheeling anywhere in your station. So don't risk your service profits on any ordinary mechanical one-end lift. Phone or see your Blackhawk jobber *right now!*

SPECIFICATIONS	
High lifting height	29"
Low lifting height	7 1/8"
Height of jock	33"
Width of saddle spread ..	.4 1/4 to 22 1/4"
Weight	44 lbs
Capacity	1 1/2 tons

Use Jeep-Jack
anywhere... in the
station... on the road



Toss Jeep-Jack in the wrecker, service truck or "cycle". Ideal for wash rack, wheel inspections, service department, etc.



Jeep-Jack safely lifts one-end or one-wheel of any car the modern Blackhawk way. It's today's newest lifting concept.

Lifts one-end or one wheel of any car

- **PORTABLE** — Weighs only 44 pounds.
- **EASY OPERATING** universal handle action.
- **EXCLUSIVE** "Flip-Fit" double adjustable saddle support.
- **SAFE!** Built-in lowering brake.
- **FAMOUS** service-proved Saginaw Screw action.
- **RUGGED!** Built like a pyramid.
- **SMOOTHER!** Eight friction killing nylon bearing pads.

BLACKHAWK®
BLACKHAWK MFG. CO., Dept. J-696, Milwaukee 46, Wisconsin

Watch for more new work savers from Blackhawk

Management Clinic . . . Continued from page 94

what you hope to do in the new location, unless you are just starting in business. In the latter case be conservative.

The breakdown of your sales is equally important, particularly in negotiating a percentage lease. How much is labor, parts, gas and oil, etc.? What is the percentage of gross profit on each?

This happened to a West Virginia garage that signed a lease calling for a fixed monthly payment plus five per cent on all sales. The result was they finally had to take out their gas pumps. Gas customers had been a good source of shop work and accessory sales, so all sales suffered as a result.

The manufacturer's accounting department can usually tell a new car dealer within a fraction of one cent of what cost of occupancy ratio he can profitably stand, but averages are of little value to most small town independent garage operators.

Two garages less than 100 miles apart furnish a striking example of this. Both are successful operations and both showed approximately the same percentage of net profit last year, but one had a cost of occupancy ratio of less than three per cent while the other's ratio was just under fourteen per cent. The first is in an out-of-the-way location in a highly competitive town. The second is in a central location in an area where there is practically no competition. The first has a high advertising cost, takes a low markup and gas accounts for a high percentage of its sales. The second has practically no advertising expense, takes a full markup, and has a good volume on tires and accessory items.

Your last year's sales figures or average sales for the past three years, whichever is the lower, is the safest basis on which to calculate your cost of occupancy ratio when considering a new lease.

If you are just starting in business, or for some other reason must estimate your sales, the experts say by all means consult your banker and supply houses. They have access to information that is not available to you, and can view your prospects objectively.

Your next problem is the type of lease.

Three Types of Leases

There are three basic types. They are the flat rental lease, the percentage lease, and the traffic count lease. The flat rental lease calls for payment of a fixed sum each month. The percentage lease may call for a straight percentage of sales or a fixed sum plus a percentage of sales. The traffic count lease, as indicated, bases your rental

(Continued on page 100)



big profit potentials

for FORD and MERCURY "L" head V-8 engines

- JOHNSON Tappets are easily adjusted without fitting valves — after heads are on.
- Special spanners leave both hands free for more accurate adjustments.
- Patented self-locking Tappet screw holds adjustment.
- Car owners enjoy smoother, quieter running engines with more power.
- Made by JOHNSON, a pioneer manufacturer of Tappets. Your only source for original JOHNSON Adjustable Tappets and a complete line of Hydraulic Tappets.

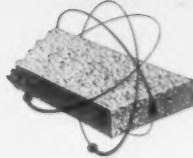
SEE YOUR JOBBER

"Tappets are our business"

JOHNSON JP PRODUCTS
INC.
MUSKEGON, MICHIGAN



For trouble-free sealing, use A-V Electronically Baked Cork Gaskets



How much do "leakers" cost you in profits and good will?

Plenty! Every time a sealing job has to be done over, more profitable jobs have to wait. Results: disgruntled customers, disgusted mechanics and no profits.

Armstrong-Victor gaskets—made of Electronically Baked Cork—help keep sealing jobs on the profit side of the ledger.

Electronic baking cures cork evenly, thoroughly, from the inside out—which the old steam-baking method can never do. As a result, only A-V gaskets offer . . .

More Uniform Density: the composition of the cork is always the same, with no pockets to weaken its structure.

Greater Uniform Strength: electronic baking

adds 10% to tensile strength of A-V gaskets. That means greater flexibility and resistance to handling, cracking and breaking.

Uniform Sealing Power: in compression-and-recovery tests, A-V cork gaskets scored almost 100% uniformity. They retain more natural resilience of cork, which produces tighter, longer-lasting seals.

Stop "leakers"—save profits—by using A-V Electronically Baked Cork Gaskets on every job. Your Victor jobber carries a complete line.

Victor Mfg. & Gasket Co., P.O. Box 1333, Chicago 90, Ill. In Canada: Victor Mfg. & Gasket Co. of Canada Ltd., Victor Drive and Chester St., St. Thomas, Ont.



Only genuine A-V Replacement Gaskets
have this trade-mark—the 2 notches.

Armstrong-VICTOR

The 100% Coverage Line—for Cars, Trucks, Tractors, Stationary Engines

New WALKER "Handy Boy"

No. 99



EASIER...
TO POSITION

EASIER...
TO RAISE

EASIER...
TO LOWER

...AND

FAST!

THE EASIEST-TO-USE HYDRAULIC BUMPER LIFT you ever owned!

Here is a truly great hydraulic one-end bumper lift—Walker engineered to meet in detail the new lifting requirements of modern automobiles.

It's the easiest-to-use jack you can own. You'll like its convenient "Top-Column" controls and its unusual "Tri-cycle" maneuverability. You'll like its new Walker designed hydraulic power unit and its fast, low effort operation. You'll like its safety features and its permanently attached "swing-away" handle.

On the driveway or on the service floor . . . for tire changing . . . wheel rotation . . . chains . . . brake or shock absorber service . . . front end assemblies . . . light body work . . . or wherever it is necessary to release springs or have both wheels free and accessible —choose the new Walker No. 99.

"Handy Boy" provides the convenient, fast, safe, unhampered hydraulic lifting power you have been hoping for.

WALKER MANUFACTURING CO. OF WISCONSIN
RACINE, WISCONSIN

Jacks • Exhaust Silencers • Oil Filters

Only
97¹⁵
U. S. DEALER NET



WALKER

NO OTHER HYDRAULIC BUMPER LIFT HAS ALL THESE OUTSTANDING FEATURES

NEW SPECIALLY DESIGNED WALKER POWER UNIT . . . Not an adaptation but an entirely new Walker precision engineered hydraulic power unit designed specially for the lifting job to be done. Fully enclosed and protected. Easily serviced.

RUGGED "STEEL COLUMN" STRENGTH . . . The load is safely supported on an unusually strong steel column with a welded steel triangular base to provide stability and safety.

"COUNTER-ACTING" ROLLER ACTION . . . The load moves up and down the steel column on broad "Counter-Acting" rollers operating on the front and back of the column. Rollers are mounted on hardened pins and "guide-flanged" to the corners of the column to assure low effort and long-lived, smooth operation.

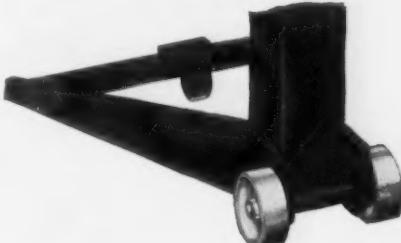
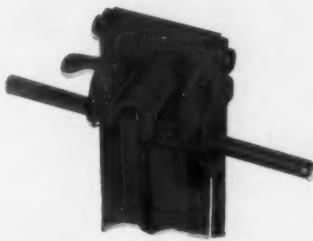
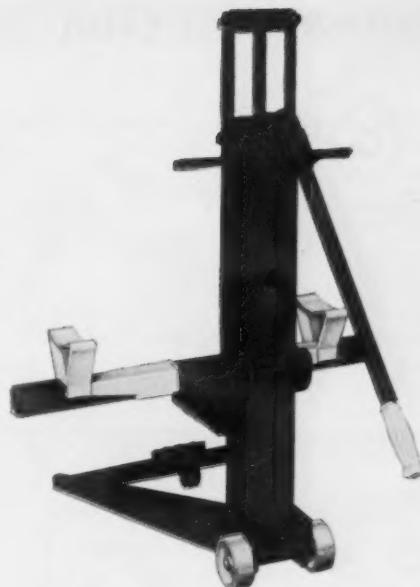
TWIN "SYNCRO-LOCK" SAFETY . . . Twin safety dogs automatically engage in both connecting links at three positions to protect the load and the operator against accidental lowering.

"ALL-CAR" ADJUSTABLE LIFTING SADDLES . . . Welded pressed steel saddles are adjustable from 23 $\frac{3}{8}$ " to 43 $\frac{1}{4}$ " to provide firm lifting points for any design of bumper. Clears all guards, hitches and tail pipes. 9 $\frac{1}{4}$ " clearance from front of column to center of saddle prevents damage to bumpers.

"FINGER TIP" CONTROL . . . Single control conveniently located on top of column disengages safety mechanism and releases hydraulic pressure for lowering.

PERMANENTLY ATTACHED "SWING-AWAY" HANDLE . . . The "Handy Boy's" handle is always ready to use—but never in the way. When not in use it swings down—out of the operating zone and may be locked in its "swing-away" position. Fitted with a comfortable plastic grip—the handle cannot get lost or laid aside.

"V-BAR" SUPPORT PLATFORM WITH "TRI-CYCLE" MANEUVERABILITY . . . The unique V-Bar base design provides an unusual combination of stability and maneuverability. Three wheels carry the "Handy Boy." The forward wheel is a swivel type caster spring loaded so the jack rolls freely in any direction. The two rear wheels are malleable iron. Under load the forward wheel deflects to allow the full "V-BAR" base to contact the ground or pavement. The forward cross member prevents the "toe" of the base from "digging in" when used on dirt, gravel or soft pavements.



LEADS IN JACKS

Management Clinic . . . Continued from page 96

on traffic counts made at stated time.

Since the experts are almost unanimous in advising against traffic count leases for small businesses, you need consider only the first two.

A flat rental lease may call for payment of the same monthly rental throughout the life of the

lease, or it may call for increases in rent at stated times. Occasionally they call for periodic adjustments of the rent based on a percentage of the appraised value of the property.

Here are the conditions under which the experts say you will be wise to seek a flat rental lease:

First, your town should have a

diversified economic base that is not subject to sudden dips as a result of a slump in any one industry.

Second, the town should be growing. The growth should be consistent and there should be good reason for expecting it to continue.

Third, the neighborhood should be in a definite upward trend. If it is changing character or running down, it may force you to increase your advertising or other sales expense to maintain volume.

Fourth, your business should have a history of at least three years of upward sales trend, with a good prospect of continuing it at least three more years.

Fifth, even though you anticipate increased volume in your new location, the rent should not be more than your sales will justify

"your equipment is the best on the market today!"

says, W. C. Goodrich, Service Manager, Bresee Chevrolet Co., Inc.

This ringing endorsement for Ammco Equipment echoes the sentiments of other leading service establishments from coast to coast. You'll feel the same when you see how YOUR volume and profits rise when you render across-the-board brake service using Ammco Equipment.

MODEL 2000 - Safe-Arc Shoe Grinder

MODEL 3500 - Brake Drum Micrometer

MODEL 1750 - Brake Shoe Gage

Ask your AMMCO Jobber to arrange a free demonstration in your own shop.

AMMCO TOOLS, INC.
2102 Commonwealth Avenue, North Chicago, Ill.

AMMCO

200 WEST WILLOW ST.
SYRACUSE 2, NEW YORK
June 4, 1956

Amico Tool Co
2100 Commonwealth Ave.,
North Chicago, Illinois
Gentlemen:

I am writing you this letter to tell you what our organization thinks of your equipment. We needed a new drum lathe and decided to buy the one we were using. After checking several different makes, we decided on your model #3000. Drum Lathe with Shoe Grinder and attachments.

When our Lathe and Grinder arrived, your factory representative was here to instruct our men in the proper use and care of same. We feel, after several months use, that your equipment is the best on the market today.

Hoping this letter will be helpful to some other Service Manager or Dealer in selecting the proper tools and equipment to handle the job, I am

Yours truly,

W.C. Goodrich
W. C. Goodrich,
Service Mgr.
BRESEE CHEVROLET CO., INC.

OK

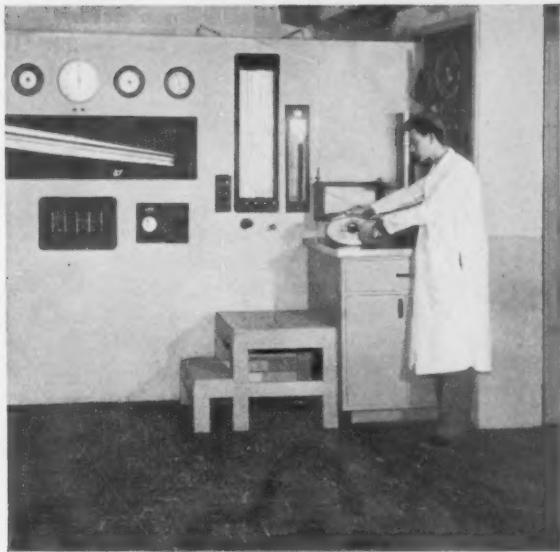


on the basis of the previous year's sales.

Sixth, the total cost of occupancy, including all expenses for which your lease makes you liable, should not exceed two per cent a month of the current market value of the property. If you are located in the southeastern states, one and one-half per cent would be more in line with the current practice in most localities.

Not Generally Recommended

Graduated rental leases, as leases with periodic rent increases are called, are not generally (Continued on page 102)



1. TESTED

In the laboratory! First: To prove beyond all doubt that the new Purolator Dry-Type Air Filter was the best money and experience could build, Purolator spent years, hundreds of thousands of dollars in laboratory tests.



2. PROVED

on the highway and the race track! Next: The new Purolator was proved by millions of miles of use in current model stock cars, on highway and race track, where the dust and dirt of every few 100 miles give the wear-and-tear of whole seasons of driving.

NOW . . . from Purolator A new Positive Dry-Type Air Filter



3. ACCEPTED

by industry for new 1957 cars! Reward came in the recognition of the overwhelming superiority of the new Purolator Dry Type by make after make of passenger car, truck and bus . . . by engine maker after engine maker!

Courtesy, Automotive News

**Another Purolator Money-maker . . .
Pre-tested and pre-sold by millions
of miles of experience**

CONSIDER what this means to you as a dealer. Here is a genuine Purolator Air Filter, a selling teammate to the great Purolator Micronic Oil Filter, "Best for all makes of cars."

Here is a Purolator Air Filter tested and proved in Purolator laboratories—by the automotive industry itself—by the world's toughest professional drivers!

Here is a Purolator Air Filter that will be backed by the sort of promotion only Purolator knows how to give . . . a pre-proved sales-builder—a true profit-maker.

Watch for further information on this great addition to the Purolator line of fine filters.

"Purolator" and "Micronic" Reg. U. S. Pat. Off.

PUROLATOR
PRODUCTS, INC.

Rahway, New Jersey, and Toronto, Ontario, Canada

Management Clinic . . . Continued from page 100

looked upon favorably for small businesses under ordinary circumstances.

The exception is when the landlord is willing to make a rental concession during the first year or two of the lease to secure you as a tenant. Even then it is not always wise. Too often his desire is based on the fact the property

has been hard to rent, rather than on your reputation for reliability regardless of how excellent that reputation may be. If such a concession is offered, look the gift horse squarely in the mouth and do a little probing for cavities.

The same experts advise you to seek a percentage lease if either of the following conditions exist:

First, if any one of the six conditions favoring a flat rental lease is lacking.

Second, if your business tends to be highly seasonal, as in the case of some garages in the winter resort areas, or some that draw a high percentage of their business from the farm trade.

There are three forms of percentage leases: the straight percentage lease and fixed payment plus percentage, already mentioned, and the limited percentage lease which places a ceiling on the rent paid in any one month or year.

The flat rate plus percentage is by far the most common and can usually be negotiated to better advantage than either of the other two. However, there are exceptions.

There are some mining and other boom and bust towns where employment is subject to great fluctuations in which landlords will negotiate straight percentage leases on favorable terms to the tenant. Where this is true, this is the most favorable type of lease you can secure because it keeps your cost of occupancy in line with your gross income.

Use Foresight

The flat rate plus percentage lease inherits both the advantages and disadvantages of both the flat rate lease and the straight percentage lease. Whether it works to your advantage or disadvantage depends to a large extent upon your foresight and ability as a trader.

Theoretically a business with ex-



smart apple is the mechanic who knows AERO-SEAL Hose Clamps — the new quick attach JET or REGULAR. They never shake open! The precision worm gear drive assures positive self-locking under toughest stress and strain. No thin, pinching, hose-damaging clamp here! AERO-SEAL's wide, smooth band provides even pressure all around. No leaks. Stainless steel band resists corrosion. AERO-SEALS are re-usable many times and available in a complete size range.

Insist on genuine AERO-SEALS for complete satisfaction, bigger profits, happy customers. Ask your jobber.



and AERO-SEAL REGULAR WORM GEAR HOSE CLAMPS

BREEZE CORPORATIONS, INC., 700 LIBERTY AVE., UNION, N.J.

It is more blessed to be deceived in some things than to be suspicious in all things.

treme seasonal fluctuations might well effect a substantial saving by negotiating a fixed payment plus percentage lease with a fixed payment representing approximately twenty-five per cent of the total rental. Experience shows it rarely works in practice. The low
(Continued on page 104)

FOR TUBELESS . . .
New for 1957 cars with 14" rims;
.453" valve holes*

No. 412R No. 414R No. 418R No. 423R

Schrader No. 505 Mounting Tool Applies
All Eze-Mount Tire Valves.
*1957 Cadillac uses No. 420R with $\frac{5}{8}$ " valve hole.

FOR TUBE-TYPE

No. 15R No. 150R No. 7823R No. 9251R

New Schrader Electric Vulcanizer simplifies
patching and valve
replacement.

Now! Here is Full Service including New 1957 Schrader EZE-Mount Valves for 14" rims

New Schrader tubeless tire valves for next year's 14-inch rims are ready now! Keep inventory up and cash in. Tubeless business—change over, repair, replacement—is already high. It will be even bigger next year. Be ready with complete tube and tubeless tire service your customers demand. Schrader can help you with everything you need. Tubeless business will be on top of your regular services for older type rolling stock, still premium customers. And don't forget: Complete air service means you're ready with Schrader Gauges, Caps, Cores: a complete line of Air Products.



A. SCHRADER'S SON
Division of Scovill Manufacturing Company, Incorporated
470 Vanderbilt Avenue, Brooklyn 38, N. Y.
FIRST NAME IN THE SAFEST TIRE VALVES
FOR ORIGINAL EQUIPMENT AND REPLACEMENT

Management Clinic .

Continued from page 102

NOW...an all-new **WILLARD** *Super Master*



Patented
SILVER-METALEX GRID ALLOY
gives Longer Service Life!

A revolutionary new grid alloy that greatly increases over-charge life . . . protects against sulfation damage . . . assures factory-fresh power far longer . . . that's new Silver-Metalex, used exclusively in the all-new Willard Super Master.

Hard-hitting advertisements, in leading national magazines, will announce Silver-Metalex to your customers, starting September 22. Get ready NOW to cash in on the tremendous profit possibilities of this sensational new Willard—available factory-fresh wet or Charged Bone-Dry® in a full range of 6- and 12-volt types.

Call your WILLARD Distributor TODAY!

fixed payment is usually accepted in consideration of a higher percentage rate. Peak periods at the higher percentage tend to more than offset the low fixed payment. If during the life of the lease your total sales increase substantially, you are stuck with the higher percentage.

From a bargaining standpoint thirty-five per cent seems to be a more practical figure for garages.

A good test for your percentage figure is that on the basis of your highest reasonably probable rent the total cost of occupancy should not exceed two per cent a month of the value of the property. (Twenty-five per cent a year.) In the southeastern states one and one-half per cent a month (eighteen per cent a year) can be used as a fair basis in many localities.

If your sales exceed your estimated volume, your cost of occupancy ratio will be lower, but not as much as with a flat rental lease. If your sales drop below it your cost of occupancy ratio automatically goes up, but not as much as with a flat rental lease.

All the advice of the experts can be summed up in one statement:

Don't overlook any possibility when you are considering a new lease.





they're
blowing
our horn
for us!

Car Life magazine names

DE SOTO

Best Buy

of all 14 cars in the medium price field



It's always nice to get a free, unsolicited pat on the back, and that's exactly what CAR LIFE gives De Soto in its July issue. After testing all 14 cars in the medium price field, Car Life said: "De Soto's 255 hp puts it right at the head of its class . . . its all-around combination of size, performance, sheer comfort, roadability and high-quality workmanship makes De Soto an outstanding buy— the best buy in the \$2,000-\$4,000 class." And, mister, that pretty well sums up the reasons why more people than ever before are driving a De Soto before they decide.

Now . . . more than ever before . . . it pays to be a De Soto Dealer

Your
customers
rely on you
for safe
Brake
Fluid!

GIVE THEM
DELCO SUPER 11 BRAKE FLUID improved with HTD

This new, heavy-duty hydraulic brake fluid provides an extra margin of safety under extreme driving conditions as well as in normal traffic. Delco Super 11 improved with HTD is four ways better: (1) efficient at 50° higher temperatures; (2) minimizes chance of vapor lock; (3) reduces loss of fluid by evaporation; (4) has better lubricating qualities. Delco Super 11 improved with HTD is the original equipment brake fluid in General Motors cars and trucks. And it's available to you everywhere through the United Motors System or General Motors car or truck dealers, in convenient sized containers—from pint cans to 54-gallon drums.



Another General Motors Value



DELCO LINED BRAKE SHOES are built to original equipment specifications. They're best for replacement.



WHEEL CYLINDER REPAIR KIT



MASTER CYLINDER REPAIR KIT

All the parts needed to put a wheel cylinder or master cylinder back in normal operating condition.



Moraine Products

Division of General Motors, Dayton, Ohio

Epoxy Resin

Continued from page 51

After a good, clean bonding surface has been prepared, dry it thoroughly with heat lamps set about ten inches away. Make sure it is completely dry before patching or trouble will develop in the repair. While this is drying, cut out any needed fiber glass cloth patches. Size them so that they reach beyond the damage about

4 inches in all directions. Cut with the weave because the cloth is loosely woven and will unravel. Keep all material DRY and CLEAN.

Making the Mixture

The success or failure of the repair depends on the proper mixing of the ingredients. Regardless

of other requirements the mixture is always 4 parts resin to 1 part hardener.

Using all clean materials, accurately measure and mix the resin and hardener. From now on there is no time to lose. At normal room temperature the "pot life" or working time of the resin is about fifteen minutes. The chemical heat concentration can be reduced and thus pot life is lengthened by frequent stirring. If extra time is needed to work, the container of resin can be placed in a pan of water or the resin can be spread out over a large area. Remember that the deeper the material may be while being mixed or applied the hotter the chemical reaction.

Occasionally you may find that the mixture is not of the proper consistency for best working results. If so, dispose of it and start over. Any attempt to add ingredients at this point usually ends in failure because the heat reaction has already begun.

Making the Layup

Apply some resin to the metal surface with a spoon or paddle. Then, saturate one piece of fiber glass cloth and place it on the metal surface smoothing with the paddle as you go. Continue to add layers of cloth until you have a buildup slightly higher than the panel. Be sure that all air bubbles have been eliminated then allow it to cure. (A layer of wax paper placed over the layup aids in the cure.)

Epoxy resin will cure at room temperature, but if more speed is desired, one or two heat lamps can be placed about ten inches from the patch. If there is excess material to be trimmed away, first allow the patch time to reach the

(Continued on page 110)

Recognize this problem?

It's one of today's most prevalent. Build-up of deposits increases compression ratio, causes knock (1); deposits become incandescent, cause preignition ping (2).



Pennzoil With Z-7 Controls Carbon, Stops Power-Stealing Knock and Ping!

• Your customers will see the difference in smooth power and pickup when you switch them to Pennzoil with Z-7. This different Pennsylvania oil has an *all-oil* lubricating body that resists even the most intense engine heat and pressures, controls power-stealing deposits, keeps horsepower unlocked *for keeps*. It's a sure way to customer satisfaction—to more profitable service business.

Available in all correct service grades.



Cash in NOW! Call your nearest Pennzoil Distributor, listed in the yellow pages of your phone book; or write Pennzoil, Box 78, Oil City, Pa.

MEMBER PENN. GRADE CRUDE OIL ASSN., PERMIT NO. 2

The tall blonde greeted her pert friend as she stepped from the train, and the two damsels embraced. The tender scene was taken in by two Marines sitting nearby astride their baggage.

"That's the whole trouble with the country," one youth moaned. "Women are doing men's work."

Monmouth*

MICRO* AND CLEVITE* 77 BEARINGS...

**you can't install greater engineering,
precision and performance!**



Monmouth bearing qualities can back up your desire to provide the finest of engine repair service. Why? Because they are the product of the world's leading manufacturer of automotive engine bearings . . . and you benefit by the most advanced bearing engineering and

bearing manufacturing techniques known today.

You can quickly get Monmouth Micro or Clevite 77 bearings that are precisely right for any car, truck, bus or tractor. Available from N.A.P.A. jobbers coast to coast.

*The words Monmouth, Clevite and Micro are registered trade marks of Clevite Corporation

Monmouth

TRADE MARK
ENGINE BEARINGS

Clevite Service

The Cleveland Graphite Bronze Co.

Division of Clevite Corporation, Cleveland, Ohio, U.S.A.



*Your
NAPA Jobber
is a Good Man
to Know!*



AT LEFT is shown the low silhouette and crisp lines of the Dual-Ghia convertible. The distance from the hood to road measures 38 inches. On the new Dual-Ghia, doors have been widened 2½ in. to permit easier entry and the engine has been re-located slightly for a better center of gravity. Styling modifications include the addition of fins to the rear fenders and the front fenders have been rounded off somewhat.

Epoxy Resin . . .

Continued from page 108

gel (tacky) stage before doing the job. Check for the completed cure with the fingernail test.

Preparation for Refinishing

Grind the patched area to a rough contour with a No. 24 disc on a slow speed disc sander. Take care not to undercut the patch. Next, work a body file over the surface from the outside edge to the center of the patch. This prevents flat spots from developing. Fill any air holes and low spots with a mixture of resin and roving or filler. Then, cover the entire area with a glaze coat to seal off exposed glass fibers. Now, do the final sanding operations. Actual refinishing operations are generally the same as for metal work.

Caution!!!

(a) ALWAYS WORK IN A WELL VENTILATED AREA.

(b) Be careful not to get resin mix on your skin or clothing. Should this happen, clean the affected area with thinner or denatured alcohol. If the eyes are contacted, flush them thoroughly with water. The use of rubber gloves is a necessary precaution that you can not afford to ignore. However, if you must work bare-handed, keep a rag nearby which is saturated with thinner. Use it to wipe the hands clean within the potlife of the resin.

(c) It is best to use an approved respirator when sanding.

(d) Use a vacuum cleaner to remove fiber glass particles that will probably stick to the clothing and skin during sanding and filing jobs. Any remaining particles will cause irritation.

...announcing the New
BONNEY UNIVERSAL
Band Adjustment Tool

To service all automatic transmissions wherever external band adjustments are required

BONNEY
TOOLS

ANOTHER FIRST

For complete details contact your Bonney Jobber . . . or write to us. Do it today!

BONNEY FORGE & TOOL WORKS • ALLIANCE, OHIO

\$ \$ \$ \$ \$

Redstone... new U. S. Army surface-to-surface guided ballistic missile that thinks for itself. Fins for steering, nose to remote objectives, packs an atomic warhead. It can be moved rapidly to far-off firing points, required for action in just hours. Redstone's largest missile ever to fly makes a significant contribution to the U. S. defense program. Texaco Special 10W-30, the motor oil that thinks for itself, makes a significant contribution to engine protection and efficiency.

\$ \$ \$ \$ \$

UP...UP...UP...

SINCE this revolutionary new all-temperature motor oil was introduced (just a little over a year ago), the sales curve has rocketed UP like this! *Havoline Special 10W-30* is building a constantly bigger and more profitable percentage of oil sales for Texaco Dealers everywhere.

Havoline Special 10W-30 is just one of the many fine Texaco products with its own powerful advertising campaign — appearing regularly in *national* advertising, reaching car owners in all 48 states.

No wonder **TEXACO DEALERS** are such busy dealers!

THE TEXAS COMPANY

meeting: After discussion of the above points, the group should elect a temporary president and secretary. A meeting date, time and place should be decided on. All independent garage owners of the area should be invited; send each garage owner at least two letters. Telephone them and make personal calls.

Take A Poll

At this next meeting the purposes for the association should be discussed again. Find out how many of the people present, really want to become members of the association. The following committees should then be appointed or elected:

Constitution and By-Laws Committee.—A local attorney should be

called in to work with this committee. The national association, IGOA will upon request furnish a copy of a constitution and by-laws to be used as a guide but to be checked by your attorney, so that all laws of your state are complied with.

This should be submitted to the general membership for revision and approval. After it is approved, a charter of incorporation should be applied for, by the attorney. Permanent officers and the board of directors should now be elected.

Additional committees should be appointed — Membership Committee, Program Committee, Financial Committee, Educational Committee, and any other that may be deemed useful.

The association will probably have to be run on a voluntary of-

NEW CARS

mean a big demand for

NEW TWIN MATS

get your share of
this growing market

. . . The market that is demanding new FloorKings and Floor Mates all-rubber twin floor mats — to protect expensive floor coverings. In 7 gorgeous colors to match any car interior, twin mats fit on either side of the hump . . . they trap and hold dirt and water . . . and they make cleaning a snap. Get your share of the twin mat business . . . with FloorKings and Floor Mates.

REAR COMPANION MATS
IN MATCHING COLORS:
For rear floor compartments, sell either Minutemats or Econ-O-Mats available in matching twin mat colors.

FloorKings

Minutemats

Econ-O-Mats

Doan MANUFACTURING CORP.
1761 LONDON ROAD • CLEVELAND 12, OHIO

**The man who trusts men
will make fewer mistakes
than the man who distrusts
men.**

ficers plan, especially at the beginning. Take warning, and do not undersell the association. It will take finances, so if it is not worth doing right, then do not do it at all. A minimum membership dues of five dollars a month has been proved by associations over the nation to be the very least with which you can successfully operate. It is almost impossible to raise the dues after they have once been set.

Federation Nationally

To federate with the national association, (IGOA). It is necessary that the purposes and membership qualifications shall not conflict with those of the National Organization.

Specific information on these aims as well as helpful background material and information on IGO of America may be had by writing to any of these three offices:

Eastern Regional Office — located at 365 Herson St., New Bedford, Mass.

Western Regional Office — located at 1387 East Walnut St. in Pasadena, Calif.

(Continued on page 116)

**the most advanced instrument
of its kind in speed...accuracy
...and ease of use**

EDELMANN No. 909 **MAGIC EYE** **FREEZ-D-TECTOR**

Keeping pace with the modern need for speed, Edelmann now makes possible the fastest, simplest anti-freeze testing in automotive servicing history. Feature of the new Edelmann No. 909 is the exclusive "Magic Eye"—a precision-molded and polished triple magnifying lens of clear, unbreakable Lucite . . . that makes freezing-point figures instantly legible, even under the poorest light and weather conditions.

With the Edelmann "Magic Eye" Freez-D-Tector, there is only one chart to dial . . . one reading to take—no matter what solution is being tested. Truly, this ultra-efficient instrument is the *world's fastest* anti-freeze tester.

Exclusive

MAGIC EYE

Triples the size of Freezing
Point Numbers For Instant,
Accurate Reading

E. EDELMANN & CO.

**2332 LOGAN BLVD.
CHICAGO 47, ILL.**



LIFE helps sell to more people than any

THAT'S WHY:

Advertisers make the most of the
pre-selling power of LIFE

They know that LIFE pre-sells their automotive accessories to the largest audience in weekly magazine history. They know that LIFE moves merchandise, each and every week, by prompting the motoring public to buy. They know that . . .



LIFE is first
with more automobile owners

*An average issue is read by 30.4% of
all car-owning households.*

LIFE is first
with people everywhere

	In Weekly Readership	In Weekly Circulation	
LIFE	26,450,000	LIFE	5,714,720
Look	18,050,000	Saturday	
Saturday		Evening Post	4,943,838
Evening Post	14,050,000	Look (bi-weekly)	4,201,297

Sources: Audience—*A Study of The Household Accumulative Audience of LIFE, A Study of Four Media.* Circulation—ABC, Publisher's Interim Statement, Jan.-March, 1956.

Automotive Accessories

other weekly magazine

THAT'S WHY:

TBA salesmen make the most of the promotional power of "Advertised-in-LIFE"

They know that LIFE is national sales power with a potent *local impact*. Week after week, LIFE pre-sells at the neighborhood level. That is LIFE's unique feature which makes it one of the most powerful, productive sales-aids you can use.

**In the average community,
LIFE reaches 3 out of 5 households
in the course of 13 issues**

Auto dealers, garage operators, and parts outlets have learned to capitalize on this. By using "Advertised-in-LIFE" promotion material, by featuring LIFE-advertised products regularly, they're making the most of a profitable pre-sold market.

They know that motoring America is a ready prospect for the products featured in LIFE.



ADVERTISED-IN-LIFE UPS YOUR SALES APPEAL 3 WAYS

1. You attract customers
2. You build prestige 3. You stimulate sales

Central Office—located at 3614 East 40th St., Tulsa, Okla.

Membership Requirements

Individual Membership requirements are defined as any person engaged in the automotive repair business, as an owner or operator, including body repair, trim shops, engine rebuilders, paint shops, ra-

diator service, brake and wheel alignment, general repair shops, and/or specialized repair shops of motor vehicles, (who are not authorized outlets of a vehicle manufacturer).

An applicant must have sufficient knowledge, skill, and equipment to perform properly the various operations required in his specific

type of business, he must have a good business reputation and maintain a building for garage or repair work.

Allied Member

If the local or state association so desires, it may accept independent parts wholesalers or jobbers, as an Allied Member.

The above is quoted from the by-laws and constitution of IGOA. If there is no conflict then, the local or state association shall send a copy of their constitution and by-laws, a full list of membership (which includes the firm name, address, telephone number, and classify the shops — such as, general repair, body and paint, wheel alignment, etc.) and membership dues, which will be 50¢ per month, or \$6.00 per year, per member.

The new association shall elect from its membership an individual member, who shall be a member of the national board of directors and the tenure of office shall be for two years. IGOA is to be notified of the election, with the name of the director, address, and other necessary information.

To form a *State Association*, when three local associations have been organized in a state, they shall join together and organize a state association. Leadership of a state association shall be vested in a board of directors. This board of directors is elected by the members of the local units.

Cordial Invitation

We extend a cordial invitation to all organized independent automotive repair associations to join with us and help us to serve each other better. To those who are in an area where no organized association of independent garagemen exists, we offer our assistance to you, in every way possible, to develop a local association.



use only
**FACTORY NEW
 GENUINE
 BENDIX DRIVES
 and
 PARTS!**



Bendix Drive

ECLIPSE MACHINE DIVISION of
 ELMIRA, NEW YORK

Export Sales: Bendix International Division, 205 East 42nd St., New York 17, New York

Bendix
 AVIATION CORPORATION

A firm was having difficulty in making a collection and as a last resort wrote the customer:

Dear Mr. Jones: What would your neighbors think if we came in your town and repossessed your car?

About a week later the firm received this answer:

Sir: I took the matter up with my neighbors and they think it would be a lousy trick.

*We're ready for the
Air Conditioning
Market...*

with

Charg-A-Can®

PACKAGED REFRIGERANTS

Summer's ahead

ELIMINATE WASTE
CONTROL PURITY
and assure accurate
charging of any car air
conditioning system



Are you ready for the big bonanza in automotive air conditioning? One-pound Charg-A-Can packaged refrigerants with "FREON-12" provide a new source of Summer-service profits, permit quick and easy charging of any car system. These disposable containers, with years of proven leadership in the refrigeration industry, eliminate bulky, wasteful, hard-to-handle refrigerant cylinders, are expertly analyzed for purity and moisture content before filling under carefully controlled factory conditions. Charg-A-Cans are easily stored, too, and available in 24-unit packages. Remember—over half-a-million cars will be air-conditioned this year and more coming... so get going!... for a complete stock, together with dependable refrigeration supplies and servicing, call your local refrigeration wholesaler today.

STOCKED AND SERVICED BY REFRIGERATION WHOLESALERS
EVERYWHERE... ORDER YOUR SUPPLY NOW!

EASY CHARGING OF ANY CAR AIR CONDITIONING SYSTEM



No special skill is required with Charg-A-Cans. Simply attach the convenient TAPACAN® valve, or similar valve-type puncturing device, to the Charg-A-Can. Operate puncturing device to pierce the seal. Withdraw part or all of contents by desired valve action. When the Charg-A-Can is empty, remove from valve and discard.

TRONA

REFRIGERATION DEPARTMENT

American Potash & Chemical Corporation

3100 EAST 26TH STREET, LOS ANGELES 23, CALIFORNIA | 99 PARK AVENUE, NEW YORK 16, NEW YORK

*TRADEMARK E. I. DUPONT
DE NEMOURS & COMPANY



Have a heart - get your anti-freeze early!

"Sure, I try to give your car the best service I can—whenever you drive in. But that's tough to do when I've got a crowd of car owners all

in a hurry for anti-freeze at the same time. So drive in early. You'll save yourself trouble and be set for winter's worst—before it comes."



Here's one way we're building early anti-freeze sales!

It's a reminder poster the PYRO folks gave us with our order of anti-freeze. We're putting it up where all our customers will see it . . . and react! It's a straight appeal to them to have a heart and get their anti-freeze in early, so we can give 'em the kind of service they ought to have.

This poster will do a better job of talking customers into early anti-freeze service than we've ever been able to do ourselves. That's why I'm having it put up. Maybe you'd like to do the same. To get one of these posters for yourself, see your PYRO jobber or write to the address below and ask for a PYRO "Have A Heart" Poster.

OLIN MATHIESON CHEMICAL CORPORATION
Automotive Products Department, Baltimore 3, Md.

Makers of Pyro Radiator Chemicals and Super Pyro® & Permanent Pyro Anti-Freezes.

Chrysler Announces Recent Appointments

A major step in Chrysler Corporation's organizational development program was taken recently with the announcement of nine new management appointments by President L. L. Colbert.

"The new organization alignment strengthens the corporation for the intensified competition we see in the future of this industry," said Colbert.

The appointments are: E. C. Row, 60, was named Administrative Vice President directly under Colbert, a new position in the company. He will be the chief administrative officer of the corporation.

Corporation Vice President Charles L. Jacobson, 60, will take on the duties of Vice President for Dealer Relations and William C. Newberg, 45, president of the Dodge Division and a corporation vice president, was assigned to the

newly created post of Group Vice President-Automotive, supervising all the corporation's Vehicle Divisions and the MoPar Division. He relinquishes his post as president of Dodge.

R. S. Bright, 44, corporation vice president who has been in charge of the Engine and Transmission Group, was named to the new post of Group Vice President-Basic Manufacturing; M. C. Patterson, 56, vice president in charge of manufacturing at Dodge Division, was named President of Dodge Division to succeed Newberg. Patterson has been with Dodge since 1920 and has served in a wide variety of executive positions, including general works manager, prior to becoming Dodge vice president in charge of manufacturing.

Corporation Vice President Nicholas Kelley, Jr., 46, was named President of the Export Division, succeeding Row. Kelley has been secretary of the corporation from 1950 to 1955, and more recently vice president-organization and in charge of dealer relations.

Other appointments included: Ron W. Todgham, 46, executive vice president of Chrysler Corporation of Canada, Limited, was named President of the Canadian company, succeeding Row.

Charles B. Gorey, Jr., 36, was named to the new post of Director of the Corporation Manufacturing Staff, and Emlyn Lloyd, 56, was named Director of Purchasing.

It's good business to stock LUCAS replacement parts for British cars

LUCAS ignition and lighting equipment is pre-sold!

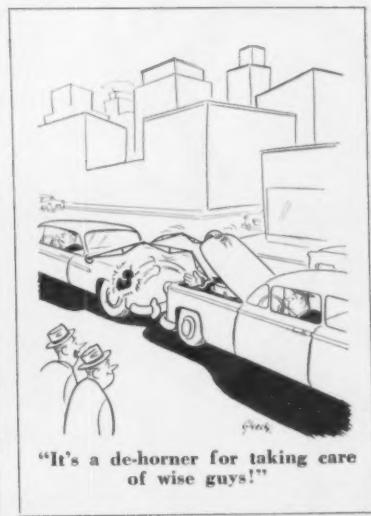
Standard for the majority of British made cars, Lucas parts are internationally famous for dependable performance. That's why it's natural for the owners of British cars in your community to request replacement of Lucas with Lucas.

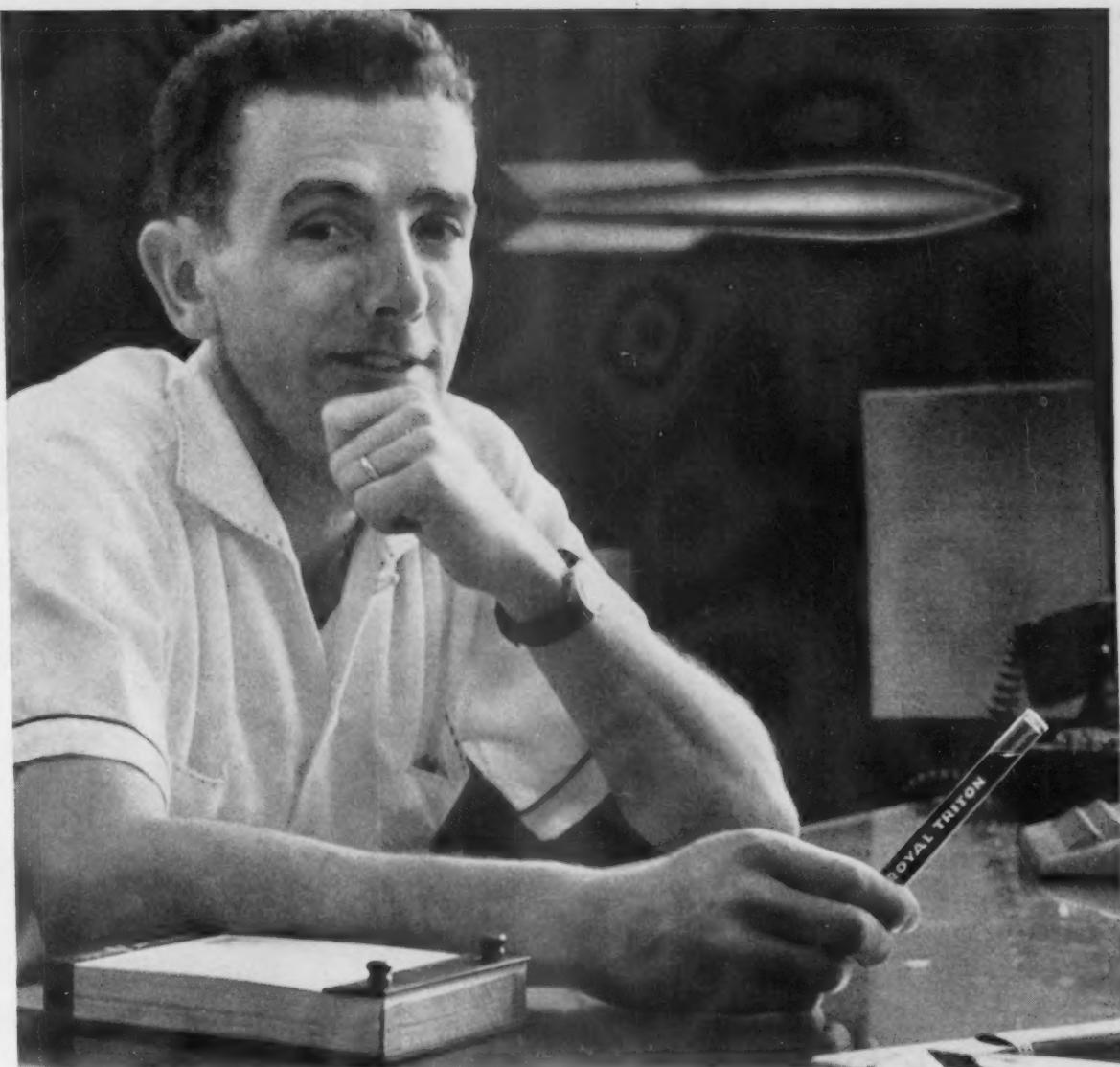
Today, more and more American service garages are opening foreign car service departments for extra profits. Find out how small an investment can do so much for you.

Write for your free copy of LUCAS POPULAR SPARES SERVICE CATALOG and Lucas' suggested inventory check list of spare parts.

Right from the start... Right for replacement!

Represented in the United States by
LUCAS ELECTRICAL SERVICES, INC.
653 TENTH AVENUE, NEW YORK 36, NEW YORK and
5025 W. JEFFERSON BLVD., LOS ANGELES 16, CALIF.
GENERATORS • STARTERS • DISTRIBUTORS • COILS
BATTERIES • LAMPS • WINDSHIELD WIPERS • REGULATORS
HORNS • GIRLING BRAKES AND SHOCK ABSORBERS





Joe Grillo, Joe Grillo Oldsmobile Company, Inc., Rosenberg, Texas

"Our service policy... Royal Triton in all new cars"



"I've made a lot of friends and loyal service customers by introducing them to Royal Triton Motor Oil. "My first experience with Royal Triton dates back to when I had another agency in Pennsylvania, but the story's the same here in Texas. Once a car owner tries Royal Triton he's invariably sold on it for good.

"It is now our service policy to put Royal Triton in all new cars we deliver. The high performance and low gas consumption which customers report when using Royal Triton have done much to build customer

confidence in our service department and in our organization as a whole."

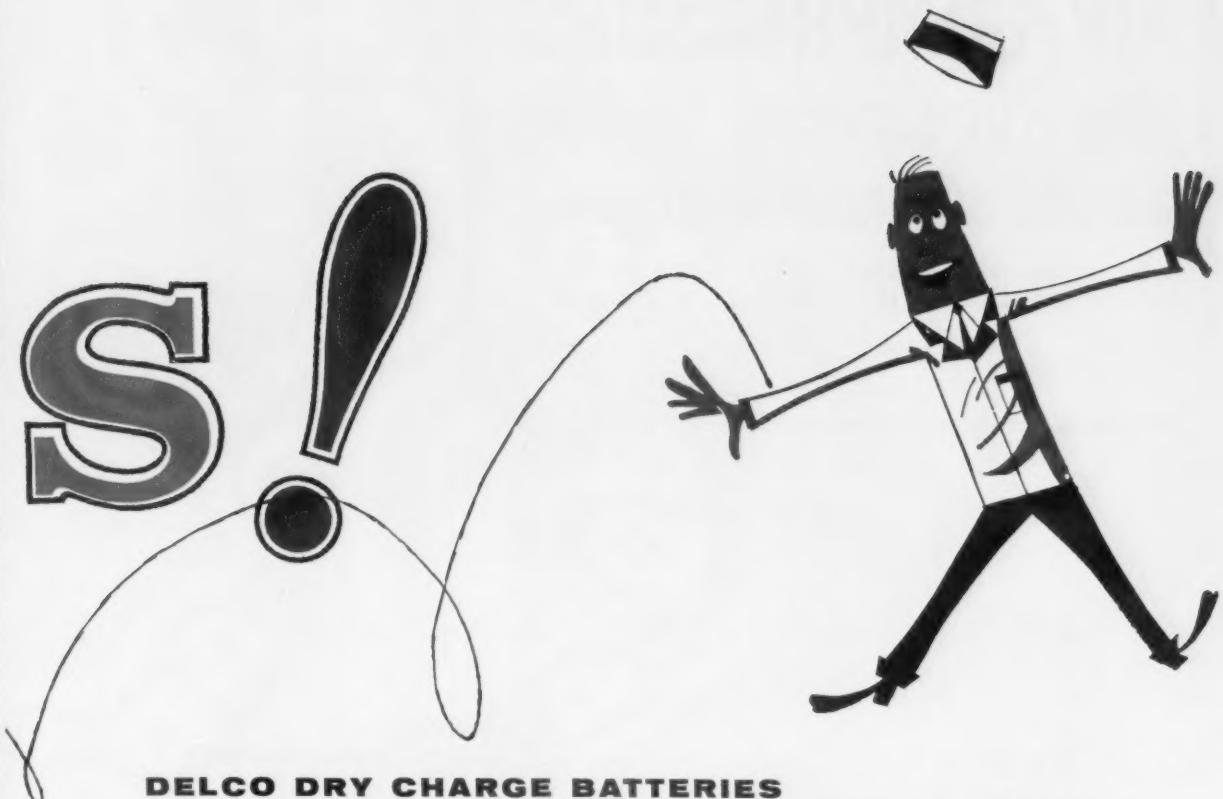
Amazing Royal Triton, the *purple* motor oil, is immediately available in all popular weights from any Union Oil representative. Ask him to start supplying your service department today.

UNION OIL COMPANY 
OF CALIFORNIA

Los Angeles: Union Oil Bldg. • **New York:** 45 Rockefeller Plaza • **Chicago:** 1612 Bankers Bldg. • **Philadelphia:** Eastwick Ave. & Edgewood St. • **Dallas:** 313 Fidelity Union Life Bldg. • **Kansas City, Mo.:** 612 W. 47th St. • **New Orleans:** 644 Nat'l Bank of Commerce Bldg. • **Boston:** 214 Harvard Ave.

three cheer





**DELCO DRY CHARGE BATTERIES
REALLY MAKE MY BATTERY BUSINESS BOOM!**

- ★ Factory-fresh whenever they're retailed
- ★ Long life warranties plus

How true! I'm two jumps ahead of the game when I sell Delco Dry Charge Batteries.

You see, I can keep both regular and odd sizes on hand indefinitely. How? Because they're stored *dry*. Never a trickle charge, nary a booster charge. Only when they're actually bought from my shelf do I add electrolyte from the convenient containers. And then those batteries, their power as fresh as the day they were built, are *rarin'* to go instantly.

And what a long, *long* life warranty, based on months of service only, both on Delco's Original Equipment Line and on Extra-Duty Delco Dry Charge Batteries! These warranties are effective regardless of passenger car mileage piled up during that time, too. AND—they're backed up by General Motors. What a sales booster!

With these two customer-pleasers, it's no wonder I'm sold on Delco Dry Charge Batteries!

LOWELL THOMAS NEWSCASTS ON CBS RADIO NETWORK — See local listings for time and station



**GENERAL MOTORS LEADS THE WAY . . .
STARTING WITH DELCO BATTERIES**



AIR COMPRESSORS

give your servicing facilities
a most dependable supply
of compressed air....



Service managers and garage operators are finding that Ingersoll-Rand Type 30 Compressors perform so reliably that little attention is required—time saved for customer servicing!

These rugged air compressors are built to give you more air-per-horsepower. And, they are always ready to meet maximum air demands on the job.

When you check their exclusive design features—like the outstanding *Balanced V Construction*—you know why so many shops say they're the “*best buy of all for efficiency and value!*” Get latest details from your nearest I-R jobber or write to:

Ingersoll-Rand
3-350
11 Broadway, New York 4, N.Y.

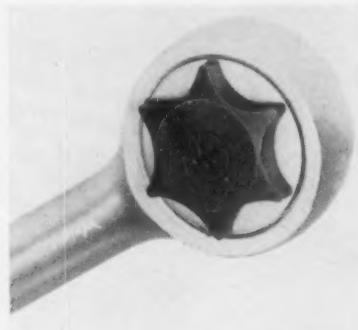
New Products . . .

Continued from page 59

der-valve ports, housings, and so on. Write: *Chain-Lock Process Company (M.A.)*, 2500 E. York Street, Philadelphia 25, Pa.

Ratchet Reverse

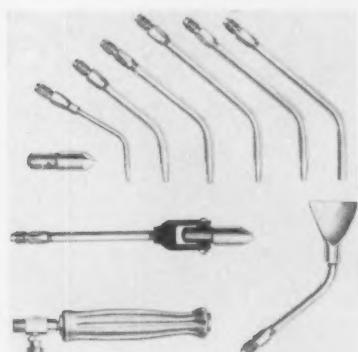
A new type reverse mechanism for ratchet wrenches, recently marketed, is in the shape of a six point star and is called the “Star Re-



verse.” It can be operated with one finger, according to the manufacturer. Write: *Wright Tool & Forge Company (M.A.)*, Barberton, Ohio.

Combination Torch

Versatility is featured in the Huber model “A” soldering and brazing torch, according to the maker. Ready to connect to an acetylene line, the model “A” has nine different tips, which produce everything from a very fine flame to a broad burner. The unit also



may be fitted with a soldering iron tip, it is stated. Write: *Huber Industries, Inc. (M.A.)*, 4968 Hillside Ave., Cincinnati 33, Ohio.

(Continued on page 129)

Here are the **FRAM \$1,000.00 U. S. Savings Bond WINNERS**

In the 1st section of the
FRAM Giant \$110,000.00 Contest



John C. O'Brien
O'Brien's Serv. Station
1160 Cowan Avenue
West Haven, Conn.



George D. Murphy
Fats Servicecenter
Box 42
Circle 5, Mont.



Harry Kugh Szynice
8601 Marine Street
Omaha 4, Nebraska



Donald Turner
4 Church Street
Muncie, Indiana



Bernard H. Anderson
Wagoner & Anderson
Waukon, Iowa



John De Pinto, Jr.
P. Torello & Son
W. Haven, Conn.



Harry M. Ward
Quontrud, Brink &
Kobold, Inc.
Grandview, Mo.



Nannie Hansen
Stork Supply Corp.
Omaha 4, Nebraska



Robert McCleaf
Ray H. Morrison
Hagerstown, Maryland



Elmer Den Harsig
Sieu-Stox City Co.
Howard, Iowa

*Did you win one of the
many other prizes?*

SECOND PRIZE—Bendix Discomatic Washers & Dryers**Dealer**

T. N. Elliott, J. Lee & A. Vilbig Co., Dallas, Tex.
Lloyd L. Burton, Burton & Williams Service, Kansas City, Mo.
R. D. Minter, Minter Motor Co., Altoona, Pa.
Leadville Standard Service, Leadville, Colo.
Rowan Motors, 6% Wm. Westfield Parts Mfg., Northatic, Mass.

Wholesaler

Ed Marder, Greater Dallas Automotive, Dallas, Tex.
C. E. English, Kansas City Auto. Sup., Kansas City, Mo.
J. J. Ryan, American Motors, Pittsburgh, Pa.
Chas. L. Conroy, Motor Ave. & Parts Co., Pueblo, Colo.
James E. Cusell, Everett Ave., Auto Parts Co., Somerville, Mass.

THIRD PRIZE—21-Inch Philips Television Sets**Dealer**

Monroe Motor Sales, K. Kendis, Ball, Ohio.
Post Trans. Co., S. B. Kehler, Richmond, Ind.
Adrian Vader, Cooper's Bros. Standard Service, Ada, Mich.
Rex Shubert, Jr., Chi.
Lum. Co., Fairfield, Neb.
James L. Hansen, Ken-Air Ionic Sta., Bradford, Pa.
Sullivan's Taxicab, Albany, Oregon

Wholesaler

James O. Shover, Penn. Rubber & Sup. Co., Columbus, Ohio.
Calvin Hughes, California East Co., Oakland, Cal.
Elmer A. Tusch, Midtown Sup. Co., Grand Rapids, Mich.
Guy Mahnke, Sildes Co., Hastings, Neb.
Peter Schwartz, Bradford Motor Parts Co., Bradford, Pa.
John Todd, Texas Oil, Inc., Louisville, Ky.

FOURTH PRIZE—1-mm. Riken Cine Cameras**Dealer**

Parker Service Station, Green Bay, Wis.
Charles M. Sutton Serv. Sta., Houston, Tex.
Williamson Bros. D. X. Serv., Kans. City, Kans.
Eugene M. Kure, Herzen-son & Sons, Sanaco, Mo.
Jas. Messmer, Dixon, Ill.
Muri, Dixon, Ill.
Roy C. Anderson, Levant Gulf Sta., Fishers, N.Y.
Guy Lanier, Jr., Lanier Motor Co., Capon Bridge, W. Va.
Frank Toth, Mgr., Island Creek Stores Co., Holden Service Sta., 37, Holden, W. Va.
World Class Corp., Oil Co., Northwood, Iowa.
Tom Dougherty, Red Staff, Col.

Wholesaler

J. Shover, Penn. Rubber & Sup. Co., Columbus, Ohio.
J. W. Davidson, Pettigrew Auto Supply, Houston, Tex.
Roy L. Magruder, Auto Parts & Color Co., Kansas City, Mo.
Lowell Dickinson, Joslin Auto Supply Co., Joplin, Mo.
J. E. McCormick, Scott Distributing Co., Sterling, Ill.
Ludy Plummer, Jamestown Auto Sun Co., Inc., Jamestown, N.Y.
Eric Lutrell, Kofles Distributors, Inc., Winchester, Va.

Wholesaler

R. C. Sheets, President, Logan Mingo Supply Co., Logan, W. Va.

Wholesaler

M. Warrington, Smith Tire & Service Co., Atlanta, Ga., Minn.
Ronald Emery, Crampton Auto Supply, Red Mtn., Col.

FIFTH PRIZE—Black & Decker Drill Bits**Dealer**

Eug. Glickstein, Columbia Oil Co., Seattle, Okla.
Forsyth W. Burman, Larson & Gross, Conby, Minn.
Gregory Teeters, Teeters Garage, Walthill, Neb.
Conrad's Conoco Serv., Denver, Colo.
Brown's Auto Service, Elizabethtown, Ky.
Evel Murphy, Murphy's Conoco, Salt Lake City, Utah.
Charles F. Stout, Nascopeck Serv. Sta., Nascopeck, Pa.
O. W. Stone, Jr., Stone Texaco Sta., Victoria, Tex.
Coleman Lumber Co., Fayetteville, Ga.
E. C. Dainwood Garage, Nashville, Tenn.
Kodulus Service Station, Allentown, Pa.
Erwin Walz, Van Nuys, Cal.
H. Adolfi, Rome, N.Y.
Bud's Mobile Service Sta., San Pedro, Cal.
Kenneth Nickey, Pine Hill, Ky.
Barber-Green Oil Co., Springfield, Kans.
Earl in Nottingham, Bloomington, Ind.
Edward D. E. Seitz, Smith Texaco Service, Ft. Collins, Colo.
Tax, S. Moore Gread, Washington, D.C.
C. Felton Deus Serv. Sta., Houston, Tex.
Ken McRae, National City, Cal.
Curtiss-Turnstrom, Ace Motors, Marion, Kan.
Joseph M. Marti, Marti's Auto Parts, Rose, N.Y.

Wholesaler

R. L. Mitchell, Mahoney Bros. Auto Parts, Clinton, Okla.
Simon Holder, Case Supply Co., Inc., Watertown, S.D.
Nebraska Auto Supply Co., Inc., Blair, Neb.
Peter Copra, Tire Mart & Supply Co., Denver, Colo.
Keith Street, Littlefield Motor Parts Co., Littlefield, Tex.
Clyde Miller, Miller Auto Supply Co., Salt Lake City, Utah

Mo. Mauro, Big Boy Auto Parts Co., Sunbury, Pa.

Wholesaler

Martin Sauer, Victor, Tex.
Joe Sauer, Motor Parts & Supply Co., Atlanta, Ga.
Paul Clark, J. B. Cook Auto Machine Co., Nashville, Tenn.
Robert Guth, Bee Inc., Allentown, Pa.
Carl Hauser, Starvation's Auto Parts, Ft. Myers, Fla.
Joseph Treadue, Ultra Gear & Parts Corp., Rome, N.Y.
Sam McConnell, McConnell Motor Parts Co., San Pedro, Cal.
Channing Todd, Dependable Auto Supply Co., Richmond, Ky.
Joe M. Lammon, Falls City Auto Supply, Falls City, Neb.
James M. Patten, Arco Motor's Co., Bloomington, Ind.
L. C. Matilija, Mack's Auto Supply, Ft. Collins, Colo.

W. C. Nix, Philip Roberts Corp., Washington, D.C.
C. Felton Deus Serv. Sta., Houston, Tex.
Ken McRae, National City, Cal.
Curtiss-Turnstrom, Ace Motors, Marion, Kan.
Joseph M. Marti, Marti's Auto Parts, Rose, N.Y.

SIXTH PRIZE—G.E. Meters**Dealer**

Harmon Wallace, Short's Sinclair Serv. Sta., Andover, N.Y.
W. F. Schmidt, Schmidt Motor, Upper Sandusky, Ohio.
Silvertown Brothers, Waterville, N.Y.
Emmons Essa Sta., Emmons, Pa.
Randall C. Lemons, Coco-Cora Setting Co., East Hartford, Conn.

Wholesaler

Leonard C. Mocher, Alan Knight, Almond, N.Y.
Marion Warren, Steins Auto Parts Co., Findlay, Ohio.
William Linstead, H. A. McRae & Co., Inc., Troy, N.Y.
Robert Gull, Bee Inc., Allentown, Pa.
Robert C. Holendorf, Nutmeg Auto Supply Co., Hartford, Conn.

Miller's Service Sta., Port Arthur, Tex.

M. Willmore, Brunning Motor Service, Brunning, Neb.
Tom Edwards, Bob Edwards, Shell Service, Iron Mountain, Mich.
Bald Eagle Service, Waynesville, N.C.
George Crooks, Sinclair Sun Sta., Waynesville, N.Y.
W. A. Wilson, 10 Nevada Highway Dept., Tonawanda, N.Y.
Richard W. Ross, Ross Sta., Burlington, Vt.
L. D. Kerlein, Greenacres, Pa.
Jerry Dunham, Romeo, N.Y.
L. J. Young, Service Mgr., Greenville, Ohio.
Wilmer Jonesen Garage, Bordentown, La.

Fred Kielman, Kielman's Garage, Homestead, Pa.

G. P. Schofield, K & K Auto Parts Co., Scranton, Pa.

Lyle C. Gillis, Channer's Auto Supply Co., Burlington, Iowa.

Walter O. Grayway, Peoria Auto Parts Co., Peoria, Ill.

Tom Glass, Ancorp Automotive, Baltimore, Md.

E. T. Denison, Motor Parts & Equipment Co., St. Joseph, Mo.

Foy Schimel, W. R. Wilson Auto Parts, Westfield, N.Y.

George Unthank, Canton Hardware Co., Canton, Ohio.

Henry C. Fouberg, George A. Kreplin Co., Oakland, Cal.

Ronald Wade, Keenan Auto Parts Co., Hawkinville, Ga.

E. J. Meadry, Schwanz Auto Parts Co., Charleston, Ill.

Elmer Long, R. J. Look & Co. Inc., Baltimore, Md.

William C. Fox, Susquehanna, Pa.

Joseph C. Coughlin, Toledo, Ohio.

Brown & Kuhn, Cincinnati, Ohio.

James Norman, The Gibson Co., Greensburg, Ind.

Frank A. Hemmerle, Sieg-Dubuque Co., Dubuque, Iowa.

Dale Vickrell, Sieg Co., Burlington, Iowa.

Wayne Taylor, Crompton Bros., Burris Creek, Mich.

Horatio Emery, Crompton Auto Supply, Red Bluff, Cal.

R. D. Mallory, Auto Parts & Tool Co., Birmingham, Ala.

Ronald Nagel, Sieg Co., Davenport, Iowa.

Leonard A. Spurgeon, Sieg-Ottumwa Co., Ottumwa, Iowa.

Julius J. Sklesow, Bond Auto Supply Co., Hartford, Conn.

Frank McNamee, Sieg-Mason City Co., Mason City, Iowa.

Horatio Emery, Crompton Auto Supply, Red Bluff, Cal.

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Ronald Nagel, Sieg Co., Davenport, Iowa.

Wayne Taylor

**St. Clair Serv. Co.,
Bettie, M. H.
R. M. Walker,
Tulsa, Okla.
F. Hendrix Serv. Sta.,
Curtis Consignment,
Longview, Tex.**

**Andy Sunoco,
Cincinnati, Ohio
M. Thiel Serv. Sta.,
Weston, W. Va.
George Reiter,
Richmond, Conn.
Joseph Senko, Jr.
Joseph Senko & Co.,
Inc., South Bend, Ind.
Harold Conner,
Troy, Mo.**

**Dick Stempel, Stempel Oil
Co., German City, Conn.
Jack's Texaco Station,
Hartford, Conn.
Kelly's Oil Co.,
Altona, Ill.
Bill Voteneber, Union
Transfer Co.,
Omaha, Neb.
Robert M. Straight,
Oakes Motor Co.,
Fort Collins, Colo.
Nest City Motor Co.,
Nest City, Kans.
Moore's Shell Service,
Indianapolis, Ind.
Morris Brothers Shell,
Indianapolis, Ind.
Elliott's & Shaw Eve
Serv., Memphis, Tenn.
Texaco Store Service,
Arlington, La.
Cloudia Collins ABC
Serv., Monroe, Cal.
Foster Std. Service,
Billings, Mont.
Franklin's, Jones,
Midvale, Kans.
Bennion Construction
Co., Co. Waukesha Ford
Wheel, Waukesha.
B. D. Banks,
Kosciusko, Tenn.
Harold W. Hancham,
Massachusetts' Cities
Serv., Victor, Iowa.
Mark Schrock, North's
Tanco Station,
Minnow, Minn.
Kaci Park, Park Tanco
Serv., Lexington, Ky.
Tony Mikula, Elmwood
Service Station,
Green Neck, N. Y.
Francis Clark, Clark Geff Leland L. Lester, Alan Knight
Dist., Homestead, Pa.
W. W. Short, Cys Super
Serv., Goshen, Ind.
Eugene S. Henke,
Green Growers Oil Co.,
Scooby, Mont.
Bill Connor, Ronca,
Abilene, Wyo.
A. Joyal, Central
Garage, Watsburg, Pa.
J. H. Harris, Jr., Muncie
S. P. Service Station,
Waldron, N. C.**

**Bernard J. Cato, Cato Bros. Auto
Supply, Berlin, N. H.
Bonnie Clark, Standard Parts
Inc., Tulsa, Okla.
Emmett Serpos, West-Cannally
Co., Longview, Tex.**

**P. George Samson Automotive
Parts, Cincinnati, Ohio.
Paul Elgin, Pittsburgh, Acme
Serv. Co., Southerville, Ohio.
Ray Schmidt, Local Oil Co.,
Ottawa, Kan.
H. C. Washburn, The Gibson Co.,
South Bend, Ind.**

**Edward M. Kehn, Tracy Auto
Parts Co., Tracy, Mo.
M. Howe, Machine Supply Co.,
Garden City, Kans.
F. C. Holander, Normag Auto
Supply Co., Hartford, Conn.
H. B. Garrett, Sieg Co.,
Galesburg, Ill.
Frank Stanoscheck, Shidley Co.,
Omaha, Neb.**

**Erwin Matejka, Mack's Auto
Supply, Ft. Collins, Colo.**

**B. J. Lapp, McKinley Automobiles
Co., Dodge City, Kans.
B. Mason, B. O. Mason,
Acton, Ind.
Clint Thompson, The Gibson Co.,
Indianapolis, Ind.
C. L. Boehm, J. B. Cook Auto
Machine Co., Memphis, Tenn.
M. Holmes, Auto Parts & Battery
Service, Inc., Alexandria, La.
Obie Bumpus, Jock Bidinger Auto
Parts, Glendale, Cal.
K. Noyes, Jr., Northwestern Auto
Supply Co., Billings, Mont.
John City, Southwest Automotive,
Inc., Topeka, Kans.
J. R. Fuchter, Farmington Auto
Supply, Farmington, N. M.**

**Noel Hooley, Frankford,
Jackson, Tenn.**

**B. Blanchard, Belle Plaine Motor
Supply, Belle Plaine, Iowa.**

**William A. Hens, General Truck
Co., St. Cloud, Minn.**

**William H. Miller, Womwell
Auto. Pts. Co., Lexington, Ky.**

**Eugene O'Rourke, Walters Dis
tributing Co., Mineola, N. Y.**

**Rainie Behn, Stickney's, Inc.,
Scottsbluff, Neb.**

**Joseph Luccorondo, Richard J.
Wolf, Erie, Pa.**

**Jock Doherty, Davis & Co., Inc.,
Conway, N. C.**

**J. H. Tucker,
Jackson, Miss.
Nels Johnson,
Bemidji, Minn.
Savory Oil Co.,
Ankeny, Ia.
R. H. Fulton Corp. Co.,
Aztec, N. M.
Michel's Suzuki Service,
Mt. Prospect, Ill.
Cox's Service Station,
Springfield, Ohio.**

**Lou Greenwald, Green's
Service Station,
Vineyard, N. J.
Game Louis, Gasser,
Hyde Park Texaco,
Cincinnati, Ohio.
James B. LeLurje,
New Haven, Mich.
Arthur Oynski, Clinton
Serv. Sta., Cicero, Ill.
Doris' Texaco,
Manhattan, Kans.
McDonald Shell,
Pawtucket, Ohio.
Addy Motors,
Shelby, Mont.
North Side Sinclair
Ft. Collins, Colo.
Johnny's Shell Serv.,
Clawson, Mich.
C. L. Gross, R. X. Serv.
St., Montgomery, Ala.
Don W. Young,
Pueblo, Colo.
Novak Construction Co.,
Brooklyn, N. M.
Hebrus Garage
Covington, Ky.
Charles M. Monk, Glen
dale, Brooklyn, N. Y.
Thomas DePalma,
Vicars Auto Electric,
Providence, R. I.
Walker C. Williams,
William Std. Service,
Milwaukee, Wis.
E. J. Jansen, Motor
Service, Grand Rapids,
Grand Rapids, Mich.
Ave. E. Club, Ave. E
East Dix Aut. Service,
Corner, Iowa.
Barry's Econ Service,
Baltimore, Md.
H. O. Winkl,
Madison, Wisc.
Cardio Sinclair Service,
Indianapolis, Ind.
Joe Thomas, Serv.
Mr. Adams Co. Prod
& Dist., Bigerville, Pa.
Donald Lee Smith,
Baltimore, Md.
Schollman Service Sta.,
Rehoboth, Ohio.
Barnes Gulf Service,
New Canaan, Conn.
Howard P. Evans,
Baltimore, Md.
Cooper & Assoc. Service,
Long Beach, Cal.
E. E. Baker,
Salina, Kan.
Paul Klier Service,
Lumberton, Texas.
Anderson's Texaco Serv.,
Montezuma, Iowa.**

**John E. McCuller, Miles-Martin Co.,
Jackson, Miss.
F. A. Mailman, N. H. Krugg
& Son, Bangor, Me.
Lloyd M. Finley, Parts & Supply
Co., Anderson, S. C.
J. R. Peckett, Farmington Auto
Supply, Farmington, N. M.
E. Friedrig, Des Plaines Auto
Parts, Inc., Des Plaines, Ill.
Hardy Glasgow, Southwest Motor
Supply, Elk City, Okla.
Louis Puglisi, Lou's Auto Pts.,
Akronite, Vineland, N. J.**

**E. C. Paesler, Auto Rod Sup
Co., Inc., Cincinnati, Ohio.**

**W. R. Harcourt, The Automobile
Equipment Co., Detroit, Mich.
Universal Automotive Supply
Co., Chicago, Ill.**

**Allen Ward, Manhattan Auto
Supply, Manhattan, Kans.
Marion Walters, Stoile's Auto
Service Parts, Inc., Findlay, Ohio.
George N. Tichems, Valley Mater
Supply Co., Shelby, Mont.
Ervin Motors, Mack's Auto
Supply, Ft. Collins, Colo.**

**Chief Campbell, The Automobile
Equip. Co., Detroit, Mich.
James M. Grant, Aronow Supply
Co., Montgomery, Ala.
John Smith, B. S. Sweney Co.,
Fresno, Calif.**

**J. R. Fuchter, Farmington Auto
Supply, Farmington, N. M.
G. M. Fisher, George M. Fisher
& Son, Covington, Ky.
Eugene O'Rourke, Walters Dis
tributing Co., Mineola, N. Y.
Ted Grant, Werner Sullivan &
Nilsson, Inc., Providence, R. I.**

**William A. Hens, General Truck
Co., St. Cloud, Minn.**

**L. Adams, Passer Motor Supply
Co., Inc., Pasco, Wash.**

**H. Green, Decatur Auto Parts Co.,
Decatur, Ga.**

**W. E. Flattbush, Pts.,
Major-White Motor
Co., Inc., Brooklyn, N. Y.
Victor Hoffman,
Huntington, Ore.
Stevens' Clean Service,
Westland, Mich.
Paul Gossman, Oregon
Motor Service, Grand
Rapids, Mich.**

**Ave. E. Club, Ave. E
East Dix Aut. Service,
Corner, Iowa.
Barry's Econ Service,
Baltimore, Md.
H. O. Winkl,
Madison, Wisc.**

**Cardio Sinclair Service,
Indianapolis, Ind.
Joe Thomas, Serv.
Mr. Adams Co. Prod
& Dist., Bigerville, Pa.
Donald Lee Smith,
Baltimore, Md.**

**Schollman Service Sta.,
Rehoboth, Ohio.
Barnes Gulf Service,
New Canaan, Conn.
Howard P. Evans,
Baltimore, Md.
Cooper & Assoc. Service,
Long Beach, Cal.**

**E. E. Baker,
Salina, Kan.
Paul Klier Service,
Lumberton, Texas.
Anderson's Texaco Serv.,
Montezuma, Iowa.**

**John Allen Miller, J. C. Miller
Co., Atlantic City, N. J.
B. Cammins, Cave Supply Co.,
Inc., Waukesha, S. D.**

**C. Thompson, The Gibson Co.,
Indianapolis, Ind.
Joe Dull, Shoebox Builders,
Inc., Carrollton, Pa.**

**Jim Packham, Greens Supply Co.,
Elmira, Ohio.
Jack Colton, North Harris
Co., Inc., Northport, Conn.**

**George Judd, Automotive
Sup. Co., Long Beach, Cal.
Leo Peiffer, Merrill Eddie
Supply Co., Salina, Kan.
Glen Trotter, Goff Motor
Supply Co., Sioux Falls, S. D.
Leonard Sprague, Sioux City
Co., Ottumwa, Iowa.**

**John E. Puckett, Farmington Auto
Supply, Farmington, N. M.**

**William A. Hens, General Truck
Co., St. Cloud, Minn.**

**Gerwitt & Co.,
Minneapolis, Minn.
Dan Iseli Garage,
Ontario, Ore.
Wilkensons Serv. &
Repair, Grace, Idaho.
Moffett Standard Serv.,
Indianapolis, Ind.
Divis Johnson, Johnson
Serv. Sta., Bangor, Wisc.
Guy O. Kaderli,
Krueger Chevrolet Co.,
New Braunfels, Tex.
Budd Paisley, Paisley
Mobile, Mindoro, Wisc.**

**Otto Schroeder,
La Crosse Auto Supply
Co., La Crosse, Wisc.
Walt Brown, Toledo Buckeye
Auto Pts., Toledo, Ohio.
O. F. Petrol, Diana Motor Sep.
Co., Inc., Orlando, Fla.
H. S. Dutch, Slay Co.,
Davenport, Iowa.**

**E. J. Wilkes, Sorrell Supply
Co., Bettendorf, Iowa.
Desert Hwy, Desert Hwy
Auto Parts, Sparks, Nev.
Vernon Schilling, Stickney's
Inc., Stickney, Ill.
H. Ginn, Decatur Auto Parts
Co., Decatur, Ga.**

**W. J. Shatzman, Pennsylvania
Rubber & Supply Co., Erie, Pa.
Daniel J. Corr, Worcester Rim &
Wheel Co., Worcester, Mass.**

**J. DePass, Motor Parts & Supply
Co., Atlanta, Ga.
C. R. English, Kans. City Auto
Supply Co., Kans. City, Mo.
M. Keyes, Pennsylvania Rubber
& Supply, Oil City, Pa.**

**John Kneller, W. Wightman,
Avondale, Cal.**

**Edward Bensler, Wright Auto
Supply Co., Inc., Marion, Mo.
James N. Cross, House Hove, &
Point Co., Burlington, Vt.
Russell Colthack, General
Automotive Supply Co.,
Worcester, Mass.**

**Boone John, Continental Oil
Co., Postville, Idaho.
Jack Johnson, Johnson Motor
Sup. Co., Inc., Grand Rapids, Mich.**

**John Allen Miller, J. C. Miller
Co., Atlantic City, N. J.
B. Cammins, Cave Supply Co.,
Inc., Waukesha, S. D.**

**C. Thompson, The Gibson Co.,
Indianapolis, Ind.
Joe Dull, Shoebox Builders,
Inc., Carrollton, Pa.**

**Jim Packham, Greens Supply Co.,
Elmira, Ohio.
Jack Colton, North Harris
Co., Inc., Northport, Conn.**

**D. H. Morris, Morris Service & Auto
Parts, Van Nuys, Cal.
W. L. Waller, Long Grove
Hardware Co., Birmingham, Ala.
Nelson Saltzman, Ace Motors
Serv., Ridgewood, N. J.**

**D. Williamson, Smith & Flanders,
Wrightsville, Ga.
John A. Cloy, Cedar Rapids Auto
Supply Co., Cedar Rapids, Iowa.
Victor D. Alvarez, Harry Morris
Co., Norwalk, Conn.**

**A. Ambergier, George F. Myers,
Inc., York, Pa.**

**F. Midlo, Morris Pts. Co. of
America, Inc., Chicago, Ill.
J. C. Johnson, Motor Service Co.,
Dakota, Okla.**

**W. S. Hodges, Sieg Co.,
Burlington, Iowa.
W. J. James, J. C. Cook Auto
Supply Co., Nashville, Tenn.
James D. Harne, Barnes Motor &
Parts Co., Inc., Wilson, N. C.
S. J. Jones, Wylie Auto Supply
Co., Piedmont, N. C.
F. C. Housknecht, Upton
Maybach, Inc., Spokane, N. Y.
James Lewis, Northern Auto
Supply Co., Stevens Point, Wisc.**

**NOTE: Canadian winners will be announced
separately in Canada.**

NINTH PRIZE—Russia Crown Table Lighters

Dealer

**Tinsley Tire Co.,
Knoxville, Tenn.
S. & W. Garage,
Lawrence, Col.
Harold White, Wisc. 44
Service, Akron, Colo.
E. T. Little, Greenville
Auto Serv., Greenville,
Greene County, Cal.
Maurice A. Lyons, Lyons
Automobile Service,
P. Wayne, Ind.
P. Bruce Fleming,
Hartman Brothers, Inc.,
Wisconsin Dells, Wis.
Parkway Soho,
Cincinnati, Ohio.
Paul Hallon,
Jackson, Tenn.
Albert Brothers Trucking,
Wisconsin Rapids, Wisc.**

Wholesaler

**W. H. Hendrie, Standard Tire
Co., Knoxville, Tenn.
Marvin Cates, Eddings Brothers,
Inc., New Haven, Cal.
William S. Jackson, Stickney's
Inc., Ft. Wayne, Ind.
Arthur Bibs, Southington Motor
Supply Co., Inc., Southington, Cal.
Ivan Whittemore, Motor Parts
& Engt. Co., Ft. Wayne, Ind.**

**T. P. Diagonal, Montana Motor
Supply, Inc., Dillon, Mont.**

**E. Seeger, Spmons Automotive
Parts, Cincinnati, Ohio.**

Noel Hooley, Frankford, S.

Jackson, Tenn.

**Ted Irone, Northern Auto
Serv., Wisconsin Rapids, Wisc.**

TENTH PRIZE—Deutsche Bath Towels

Dealer

**Joe C. Eaves,
Jeffries Eaves, Inc.,
Fountain, N. M.
Sylvester Seiffersmann,
Elmira Service,
Elmira, Minn.**

Wholesaler

**J. E. Puckett, Farmington Auto
Supply, Farmington, N. M.**

**William A. Hens, General Truck
Co., St. Cloud, Minn.**

YOU CAN STILL WIN in 2nd Section of FRAM GIANT CONTEST!

**WIN ONE OF 14 NEW FRAM
EQUIPPED CARS IN FULL
YEAR CONTEST OR OTHER
WONDERFUL PRIZES IN 2nd
HALF CONTEST**

If your name was not in the list of winners—here's your chance to win! If you've already won a prize—now's the time to win again! The second section of FRAM's Giant \$110,000.00 Contest is just beginning and you have the best chance ever of winning a brand-new car plus other prizes.

All you do is estimate the number of filters you think FRAM will ship to manufacturers during the periods named on your entry blank. That's all there is to it! Enter as often as you like! See your FRAM Wholesaler Salesman for entry blanks, rules and hints to help you win!

NOW...3 FRAM DEALS...and you get 4 FREE CARTRIDGES WITH EACH!

D-1

FORD • LINCOLN • MERCURY
Contains 30 Cartridges
for Ford, Lincoln and
Mercury; 18 C-4 Car-
tridges; 12 CH-6PL Car-
tridges. You pay for only
26—get 4 C-4 Cartridges
free!

D-2

CHEVROLET
Contains 30 Cartridges
for Chevrolets; 12 C-4
Cartridges; 6 C-21 Car-
tridges; 12 CH-106PL Car-
tridges. You pay for only
26—get 4 C-4 Cartridges
free!

D-3

**BUICK • OLDSMOBILE
PONTIAC**
Contains 30 Cartridges
for Buick, Oldsmobile and
Pontiac; 30 CH-106PL
Cartridges. You pay for
only 26—get 4 CH-106PL
Cartridges free!

30 CARTRIDGES FOR THE PRICE OF 26

FRAM
D-1

FRAM
D-2

FRAM
D-3

NEW FRAM 2nd HALF CAMPAIGN

It's primed and timed to help you sell more FRAM! Includes: colorful full-page and 2-page spread advertisements in *Saturday Evening Post*, *Collier's*, *Popular Science*, *Farm Journal*; more than 200 giant highway bulletins and over 3,000 regular billboards from coast-to-coast; a big new dealer tie-in kit containing a great new football window display and a special tie-in streamer and entry blank for prize contest!



THE BIGGEST FRAM FANTOM PAY-OFF IN HISTORY!

NOW YOU CAN
WIN 20 SILVER
DOLLARS WHEN YOU
CATCH A FRAM
FANTOM!

The famous FRAM FANTOMS are back! More than 75 of these Fram Fantom Drivers will be on the road—giving 20 silver dollars to every dealer who asks the magic phrase, "How's your oil filter?" or any other question that might lead to the sale of a replacement cartridge. The FRAM FANTOM will be in your vicinity. He (or she) may be your next customer, so play it smart—suspect every motorist! You'll start plenty of extra cartridge sales and you'll win 20 silver dollars if you catch THE FRAM FANTOM!

New Products . . .

Continued from page 124

Transmission Holder

A universal transmission adapter has been introduced for use with the Milwaukee Twin-Lift jack. The unit is claimed to handle all standard and automatic transmissions on all American cars through 1956, including the Jetaway, without adapters. Write: Milwaukee Hydraulic Products Corp. (M.A.), 800 South 108th Street, Milwaukee 14, Wis.

New Literature

Shop Exhaust Systems

A detailed equipment catalog of underground and overhead carbon monoxide exhaust systems has been compiled. The free catalog describes four systems of carbon monoxide exhaust. Three of the eight pages give an analysis of each type: underground concealed, underground non-disappearing, overhead disappearing and overhead exposed. Write: Car-Mon Products Company (M. A.), 4554 N. Broadway, Chicago 40, Illinois.

Welding Catalog

The 1956 revision of its No. 150 general welding catalog covering its complete line of oxy-acetylene welding and cutting torches, machine cutting torches, regulators, pressure gauges, hose connections, couplings and safety equipment has been published by Meco. Write: Modern Engineering Co., Dept. 235 (M. A.), 3407 Pine Blvd., St. Louis 3, Mo.

Alternator Folder

Designed for field maintenance personnel, a free six-page folder, illustrating and describing the step-by-step maintenance and repair procedures for its line of standard alternators, has been released by Leece-Neville. Each of the 14 steps is pictured, with detailed text supplementing each photograph. Other illustrations show alternators installed. Write: Leece-Neville Company (M. A.), 1374 East 51st Street, Cleveland 3, Ohio.

British Parts Catalog

A handy catalog of Lucas ignition and lighting replacement parts for British vehicles has been published by the manufacturer.

The 12-page booklet, entitled "Lucas Popular Spares," lists electrical parts most frequently in demand for British made cars, trucks, tractors and motorcycles and covers new models. Free. Write: Lucas Electrical Services, Inc. (M. A.), 653 Tenth Avenue, New York 36, N. Y.

Training Aid List

A listing of educational training aids on the servicing of Rochester carburetors has been prepared in booklet form by Rochester. The booklet is available, free of charge, to schools training automobile mechanics. It contains a listing of training films, schematic drawings, parts and service bulletins, and manuals on carburetor servicing. Write: Service Manager, Rochester Products Division of General Motors (M. A.), Rochester, New York.

"\$3,969
in one month
SERVICING
RADIATORS!"

—Neyland's,
Baton Rouge, La.

Only INLAND is
advertised in
SAT. EVENING POST
and COLLIER'S

INLAND
RADIATOR EQUIPMENT

"My new Inland equipment and the wonderful job it does has attracted lots of customers. In 3 months my volume grew until it hit \$3,969.40 in a single month!" says Bob Neyland.

\$10,000, \$12,000, \$15,000 a year is common! Herman's Radiator Service took in \$1,375 in 1 mo. "Now going at rate of \$18,000 a year"—Clough Auto Parts. Radiator servicing will bring you more profit per sq. ft. than any other activity in your service area!

20,000,000 Radiators Need Servicing Yearly! Most 2-year-old radiators are partly plugged. Inland national advertising warns of danger in neglecting radiators...urges seeking nearest Inland-equipped shop.

Inland, world's largest radiator servicing equipment manufacturer, offers the complete package—equipment, training, merchandising and "Pays-For-Itself" purchase plan.

EASY TO OWN! You buy direct from factory—SAVE \$\$\$! No salesmen, dealers, make one small down payment!

FREE TRAINING SCHOOL Complete factory school trains you or your man quickly. Cleaning, repairing, recoring, pricing, merchandising—everything! Hundreds of graduates now are expert radiator repairmen. "Your training was excellent!" says L. J. Messer Co., Lincoln, Nebr. and many others. It's FREE to Inland customers.

MAIL TODAY

New free 48-page book, "Blueprint for Profits," tells about many making an EXTRA \$8,000 to \$15,000 a year servicing radiators. Gives details and prices of required equipment, Inland's "Pays-For-Itself" purchase plan. Invest a minute to mail the coupon—the rewards can be amazing!

**INLAND MFG. CO., 1108 Jackson St.,
Dept MA-9 Omaha 2, Nebr.**

"SOLD EXCLUSIVELY BY MAIL"

**INLAND MFG. CO., Dept. MA-9
1108 Jackson St., Omaha 2, Nebr.**

Please send new free book, "Blueprint for Profits."

FIRM _____ (PLEASE PRINT)

ADDRESS _____

CITY _____ ZONE _____ STATE _____

BY _____ TITLE _____

If dealer, make of car sold.
Are you now operating a radiator shop? Yes No

Brake System Continued from page 43

boiling, which could cause it to expand in the system.

If the brakes drag, check for a swollen primary cup, frozen wheel cylinder pistons, by-pass hole clogged in the master cylinder, or out-of-round drums. If the brakes release slowly, check for a swollen master cylinder cup, clogged brake hoses, or gummy wheel cylinder

pistons. Many of these things might not normally show up on a relining job.

Examine the drums for scoring, bell-mouth, out-of-roundness, glazing, hard spots and heat checks as soon as they have been removed. Then if they need to be reground or turned down on a lathe, this can be done while the rest of the job

is progressing. If a drum is in bad shape, it may have to be turned down beyond a safe point. The recommended maximum which should be removed is usually 0.030 inches. Over that the drum may be shaved so thin that it would not hold its shape under intense heat and high pressures.

When a drum requires too much turning down or is broken or cracked, it should be replaced. While a screwdriver or other such tool is often mis-used to remove brake springs, it's advisable to use regular brake spring pliers for this purpose. It's safer and there's less chance of stretching the spring excessively. When removing the brake shoes, take a look at the way the lining is worn. This can tell a lot about how the brakes have been operating. If the lining shows the most wear at the opposite corners, the shoe is twisted and should be replaced. If the lining is worn on the outside edge, the drums may have become bell-mouthing, causing the lining to contact the closest point first. If the shoe is worn on one end or the other, the anchors are out of adjustment. Anchors should, of course, be adjusted after installing new lining. Check the brake shoe and replace when necessary.

CELORON®

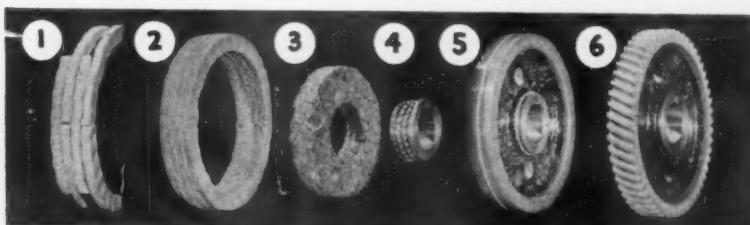
the
mark of
timing gear
Quality



For more dependable rebuilt engines, use Celoron! Genuine *laminated rim* Celoron timing gears are always stamped CELORON, your assurance that your gear cutter is giving you the best timing gear made — at a reasonable price. Celoron gears are manufactured to high original equipment standards, have uniformly

high tooth strength. (No "cheaper" gear construction has ever met the automotive industry's requirements.)

Ask your gear cutter to send you *laminated rim* Celoron gears only. Their use gives you a better reputation, gives customers better timing . . . more confidence . . . longer service life!



HIGHER TOOTH STRENGTH, MORE FLEXIBILITY, GREATER IMPACT RESISTANCE result from the exclusive six-step Celoron manufacturing process: 1. A special grade of tough cotton is coated with phenolic varnish, then cut into strips and punched into segments. 2. These segments are staggered and piled up into the outer rim which will become

the gear teeth. 3. The web or inner ring is of macerated cloth — gives the gear its side flexibility. 4. The metal bushing is inserted and the make-up is put into the mold. 5. The resin softens, the coated fabric flows and fills the mold. On hardening, a strong Celoron gear blank is produced. 6. Your gear cutter then machines teeth into the laminated rim, supplies correctly-mating metal gear.



CONTINENTAL DIAMOND FIBRE

CONTINENTAL-DIAMOND FIBRE DIVISION OF THE BUDD COMPANY, INC.
NEWARK 3, DELAWARE

THERE ARE 18 MAJOR AMERICAN CAR MANUFACTURERS:



All recommend
chrome
top groove
compression
rings for
replacement



A FULL CHROME RING SET

Pre-seated Krome-Oil fits car manufacturers' "specs" best. Chrome top groove compression ring, chrome on the side rails of the oil ring. It's a full chrome ring set to take costly comebacks out of your installations.

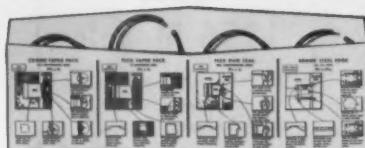


Pre-seated for instant oil control

Pre-seating is a factory-applied lapping process equivalent to hundreds of miles of actual engine operation. Krome-Oil seats fast . . . delivers instant oil control.

AMERICAN HAMMERED

Pre-seated Krome-Oil Piston Ring Sets



All-in-one Ring Envelope—prevents mix-ups, contains rings in installation sequence. A real time-saver for the mechanic.

FREE—helpful shop manual

32 Reasons for Oil Consumption—an easy-to-use, illustrated, indexed manual listing 32 major oil consumption problems and remedies. Prepared by one of the top technical staffs in the field. Write—Oil Consumption Manual, American Hammered, Dept. E, 2001 Sanford St., Muskegon, Mich.

American Hammered

AUTOMOTIVE REPLACEMENT DIVISION • 2001 Sanford Street, Muskegon, Michigan
Manufacturers of American Hammered Automotive Replacement Piston Rings.
A Division of Sealed Power Corporation

Handle the tough jobs right the first time . . . avoid costly comebacks, **INSTALL KROME-OIL**



This means top-profit jobs for you. And Krome-Oil means you turn the best work out of your shop.

Brake System Continued from page 130

disassemble the wheel cylinder. Note the appearance of the fluid. If it is gummy, milky or otherwise different from the normal appearance of brake fluid, the entire hydraulic system should be flushed out and refilled with clean fluid. Brake fluid must operate at extremely high and low temperatures and at the same time act as a lubri-

cant for all the moving parts within the hydraulic system. Mineral oil in the brake system will ruin the other parts and should be flushed out and replaced with clean brake fluid.

Hoses, too, should be checked for rotting, cracks, leaks, and internal deterioration. Usually a brake hose that is going bad can be spotted by

a soft, swollen condition. Be sure to replace all bad hoses. Sometimes a hose that has started to fall apart inside will cause grabbing or failure to release. If the hose is clogged, that brake will not apply with as much force as the others, and will cause a pull to the side opposite to the defective hose. Sometimes the interior of the hose is rotted in such a way that pressure will go to the wheel but will not release quickly enough. This causes dragging on that brake.

Once the wheel cylinder is disassembled, examine the walls to be sure that they are smooth and not pitted or scratched. They can be reconditioned by honing, but should be checked after honing with a "Go-No-Go Gage" to determine whether the walls are still thick enough to use. When too much

Own a Harley-Davidson Servi-Car . . .



keep jobs rolling through at close to 100% capacity

Servi-Car helps you build total volume, even out work loads

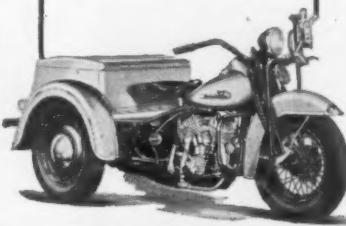
Fast, low-cost Servi-Car pick-up and delivery not only expands your business territory, it also helps you move jobs in and out in less time with less fuss. Servi-Car also helps you retain more of the business that usually wants to "try to find a shop that can do the job right away."

Be sure you have the complete story on how Servi-Car has become the automotive repair and service business's best bargain for bigger profits. See your Harley-Davidson dealer or write for free booklet "It Pays to Give Service." HARLEY-DAVIDSON MOTOR CO., Dept. MA, Milwaukee 1, Wis.

New low prices!
Excise tax now off

NEW 1956 Models

feature engineering advancements that offer better service, greater economy



SERVI-CAR SERVICE SELLS MORE SERVICE ▾

must be honed out the cylinder must be resleeved or renewed. If the pistons are burned or scored, they should be renewed, the cylinder honed out and the new rubber cuts and boots installed. Overhaul kits are available for this purpose.

Similar attention should be paid to the master cylinder. Check the rubber boot for deterioration. If this is not wet with fluid and swollen, if the brake fluid is clean and if the pedal remains firm during the road-test, the master cylinder is in good shape.

If the preliminary inspection shows possible need for master cylinder repairs, the unit should be removed and disassembled. The port hole should be open. There are two holes in the master cylinder, a hole leading to the reservoir and a smaller one which is a bypass hole. A clogged port hole will prevent the brakes from releasing properly. The primary cup should be smooth around its outer edge.

(Continued on page 134)

It isn't the same old grind...

with

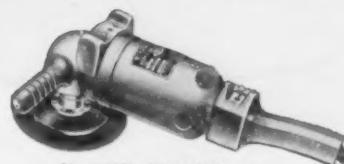
SIOUX

PORTABLE SANDERS

It isn't the same old grind because smooth, powerful, SIOUX Sanders and SIOUX Abrasive Discs operate with cost cutting speed and ease. SIOUX Sanders are precision engineered and quality built for fine performance. And there's a dependable SIOUX Sander to meet each requirement. It's an investment you'll feel good about as it repays you with year after year of dependable service.

SIOUX Resin Bond Abrasive Discs cut fast and last long. Tempered aluminum oxide grain assures maximum action. They are tough and flexible. Cutting action is not affected by grinding heat. Industrial, Regular, and Open coat types are available for each purpose.

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No. 1250 9" High Speed
Heavy Duty Sander



No. 1267 7" High Speed
Heavy Duty Sander



No. 1256 7" Lightweight
Electric Sander

USE SIOUX ALL THE WAY THROUGH

STANDARD THE WORLD OVER...

ALBERTSON & CO., INC.

SIOUX CITY, IOWA, U.S.A.



ELECTRIC IMPACT WRENCHES • GRINDERS • FLEXIBLE SHAFTS • POLISHERS • DRILLS
HAND SAWS • SANDERS • VALVE FACE GRINDING MACHINES • ABRASIVE DISCS

Brake System Continued from page 132

Sometimes it will become scored where it passes the port hole, in which case it should be replaced. This scored condition causes a creeping or fading pedal. The traveling of the primary cup past the port hole can also cause sharp edges at the hole, which can be removed with a burring tool.

If the cylinder walls are scored,

pitted, or scratched, they should be reconditioned or replaced. A repair kit containing all of the important parts is available for reconditioning the master cylinder. A cylinder and parts should be washed in clean alcohol and dipped in brake fluid before assembling. Never wash these parts in kerosene, gasoline or oil.

Before cleaning the old brake shoes, see whether they are oily. If they seem to be contaminated with oil or grease, look for leaking grease seals and replace.

Shims May Be Needed

When installing new lining, it is necessary to put shims between the shoe and the lining on jobs where the drum has been turned. The size of the shim is determined by the amount the drum has been turned down. Be sure to chamfer the leading edge of each piece of

Hy-Gear
HOSE CLAMPS

designed ...
displayed ...
packaged ...

ideal Corporation
BROOKLYN 7, N.Y.

The pacesetter in hose clamps since 1913



lining when rivets are used. This is not necessary on bonded lining.

Clean the backing plates, and make sure that the attaching bolts are good and tight. If any of these are loose, the backing plate will vibrate every time the brakes are applied.

Before installing the relined shoes, apply a special lubricant which is available for this purpose on to the anchors, guides and other metal parts requiring lubrication. Check and replace all doubtful axle and wheel bearing seals.

Proper anchor adjustment is essential for proper brake action and maximum lining life. If the anchors are not set properly, the lining will wear unevenly and will not provide a full friction surface. After the

(Continued on page 138)



ANITA EKBERG, star of Paramount's "War and Peace," says

"I like the strong, quiet type!"

Tastes in men differ . . . but in mufflers, there's only one choice . . . strong, quiet Maremont! One of the many features that makes Maremont the strongest, quietest muffler made is the multiple-wrap seamless shell. Ordinary mufflers, even those made of heavy gauge steel, pulsate in operation . . . producing "shell noise." Maremont cuts shell noise to a minimum by wrapping a single sheet two or three times around and then multiple-spot welding it from end to end. And for tougher quieting jobs, a sheet of sound-absorbing asbestos is rolled in between the layers of steel. Yes, Maremont shells are solid, yet light in weight . . . "the strong, quiet type!"

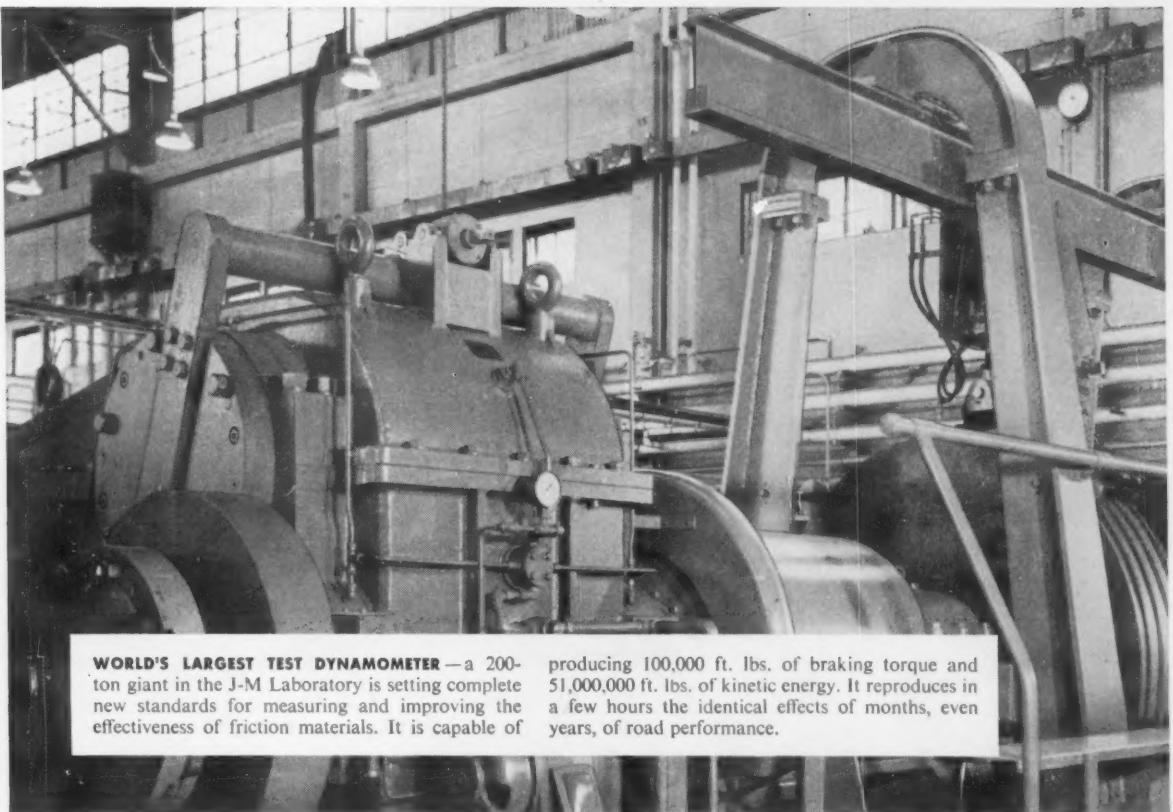
sell and install strong, quiet
MAREMONT MUFFLERS

The right design . . . for every engine!

MAREMONT AUTOMOTIVE PRODUCTS, INC.

1600 South Ashland Avenue, Chicago 8, Illinois



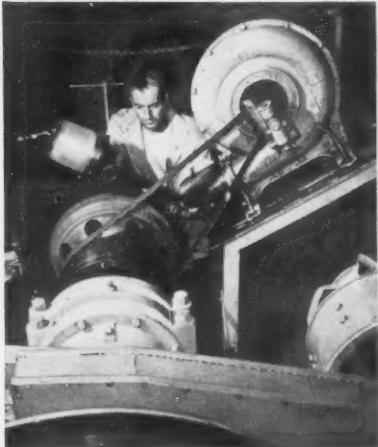


WORLD'S LARGEST TEST DYNAMOMETER—a 200-ton giant in the J-M Laboratory is setting complete new standards for measuring and improving the effectiveness of friction materials. It is capable of

producing 100,000 ft. lbs. of braking torque and 51,000,000 ft. lbs. of kinetic energy. It reproduces in a few hours the identical effects of months, even years, of road performance.

The most relentless TEST industry guarantees the quality

ENDURANCE TESTS are scientifically undertaken on a battery of four dynamometers operating simultaneously.

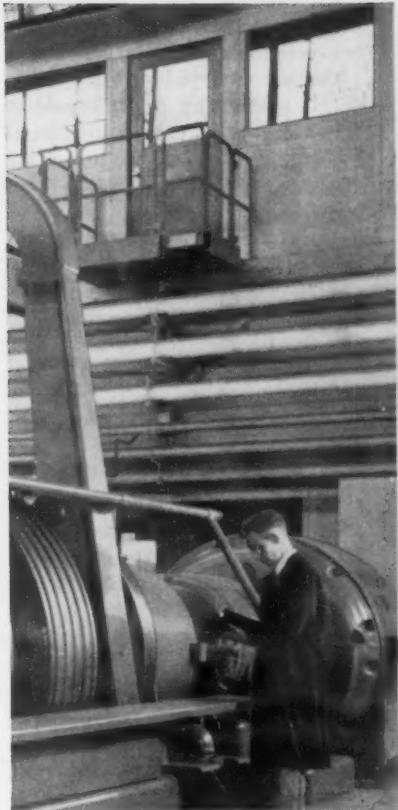


FRICITION TESTS are run at precisely controlled speeds and temperatures to determine wear and fade tendencies.



HEAT-CHECK TESTS on this analyzer—invented by J-M—determine compatibility of various linings and drum metals.





INERTIA TESTS run on the giant dynamometer utilize these huge flywheels! They weigh 27 tons yet they are so delicately balanced they can be turned by hand!



ROAD TESTS are conducted constantly using a large fleet of new passenger cars and trucks.



DECELERATION TESTS using sensitive gauges and accurate recorders evaluate brake effectiveness.



WEAR TESTS to measure lining life are carefully made of critical areas at regular intervals.

PROGRAM in the of J-M Brake Sets

YES—tests play a vital role in developing the high performance characteristics of Johns-Manville brake sets. In the J-M Research Center—largest and most completely equipped in the industry—brake lining is checked and rechecked against standards often higher than those used by equipment manufacturers.

In the laboratory and on the road this constant search for improved materials has been responsible for the dependability of J-M brake sets over the years. From these scientific evaluations have come developments in J-M materials that have helped pave the way for advances in automotive design such as power brakes, higher horsepower, automatic transmissions.

Today—and in the future—you can count on Johns-Manville Brake Lining to keep you ahead with engineering advances. Ask your local J-M Distributor about the J-M line or write to Johns-Manville, Box 14, New York 16, N.Y. In Canada, Port Credit, Ontario.



Johns-Manville *asbestos* Brake Lining

Brake System Continued from page 134

anchors have been set to the manufacturers' specifications, a lining grinder can be used to obtain perfect lining-to-drum contact.

After the final brake adjustment has been made, check the hand brake adjustment. Proper adjustment is made by putting the hand brake lever on its first notch and tightening the linkage so that the

clevit pin just enters its hole. Thus, all the slack is taken out of the linkage, but with the lever completely released, the shoes will not drag on the drums. On Chrysler product cars, where the parking brake operates on the drive shaft, there are three points of adjustment. Take up on these evenly. A properly adjusted hand brake on

these models allows 1/16 of an inch between the lining and the drum.

On cars equipped with a hydraulic hill holder, this device should be tested on every brake job. Test it by driving the car on to an upgrade and applying the brakes while holding the clutch depressed. Release the brake pedal and hold the clutch pedal down. The brakes should continue to hold the car. Then slowly release the clutch pedal and the brakes should release just as the clutch engages and moves the car forward. Adjustment is made by setting the length of the rod which is connected to the clutch. The rod is lengthened to delay the brakes releasing and shortened for quicker release. The hill holder should be mounted perfectly level. Two leveling points are cast on top of the unit for the purpose of checking this.

Making a thorough check of the entire brake system requires very little extra time on a reline and it assures the mechanic that the job is 100 per cent safe insofar as his work is concerned. Naturally, additional work cannot be done without the owner's o.k., but it's better for the customer to know what else the car may need when it leaves the shop than to have him come back later saying that the job wasn't done right.

Bleeding of Lines

The correct sequence for bleeding air from the brake system is left front, right front, left rear, and right rear. When using a pressure tank, raise the tank pressure to between 20 to 30 psi while opening bleeder screw at each wheel.

To bleed with brake pedal, depress pedal by hand—with bleeder valve open. Close valve and allow pedal to return slowly to prevent air from being drawn into the system. Sometimes it will be necessary to repeat this operation to eliminate all of the air bubbles.

An important caution to observe in this procedure is to make sure that the master cylinder is full of fluid at all times.



This Girl Is Working For You In The Johnson Plant

The name of this skilled worker has never appeared on your payroll but she works for you every day just as if she punched the clock in your own shop. And, she is doing a job for you that can't be done in most shops—a job that assures you uniform, dependable automotive replacement bearings that are made by the same processes and to the same tolerances as those used in the original engine.

Her job is to check the crush height of Johnson bearings on a

precision machine which assures you that all Johnson replacement bearings have the exact size tolerance that makes for easy installation and long life.

This is but one of the many quality tests made on Johnson Bearings before they are shipped to your distributor who stocks them in sets for your convenience. Call him the next time you need bearings. Johnson Bronze Company, 455 South Mill Street, New Castle, Pennsylvania.

Johnson Bearings



A kind deed is never lost,
although you may not see
its results.

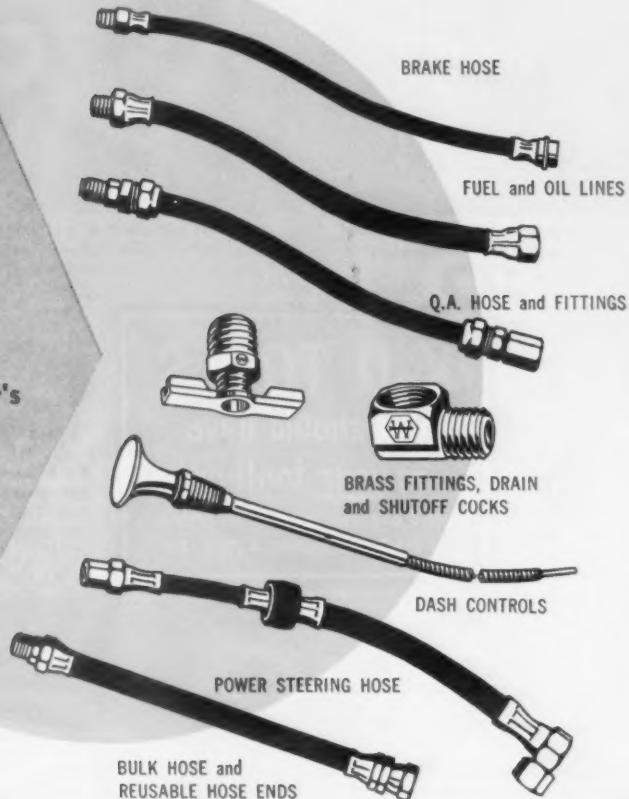
Weatherhead's Way Ahead



Not only today, but for years, Weatherhead has continued to lead the way. Reasons . . . dependability and quality . . . as simple as that. Stock and use the prestige line . . . the original equipment line . . . that's Weatherhead.



It's a fact, 64% of all automotive repair shops in the U. S. A. use the Weatherhead line. And it's growing all the time.



WEATHERHEAD

THE ORIGINAL EQUIPMENT LINE

The Weatherhead Company, 128 W. Washington Blvd., Dept. N-9, Fort Wayne, Ind.
In Canada: The Weatherhead Co., Ltd., St. Thomas, Ontario

Winter Promotion . . . Continued from page 55

checked in a hurry. Don't tell a customer "it's fine" only to have him remembering your words some frosty morning when the battery is low, the points or his ignition coil faulty, etc.

In making the Winter check-up, have the car raised on a lift or jacked up—in the customer's presence if at all possible. Here is an

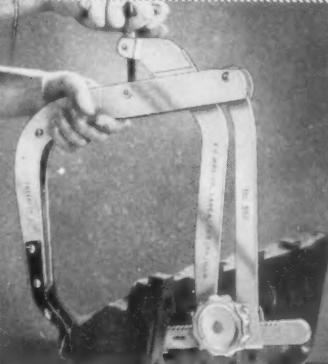
ideal selling time for a faulty muffler. Your customer need but be reminded of the danger of carbon monoxide and faulty tailpipes or mufflers should immediately be replaced.

With the car on the lift, you can check also for worn shock absorbers, front-end condition and the like. You can also recommend at

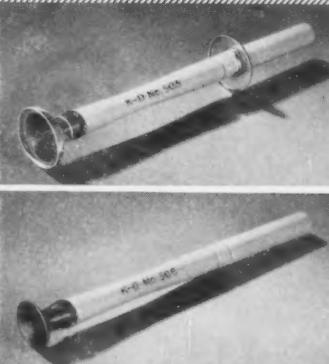
this time undercoating besides checking of universal joints, transmission and rear axle. Winter lubricants also should be stressed and never forget the brakes or condition of the tires. Wet leaves in the autumn—even before snow—are a hazard well known to all of us.

Make a thorough check. Don't neglect wiper blades, the operation of the car's heater and defroster, nor a non-freezing additive for those cars with automatic windshield washer sprays.

Last, but not least, point out to your customers the advantages of washing, polishing and waxing their cars now, before Winter strikes. He'll thank you for it next Spring and chances are he'll be showing his appreciation by driving in for one of your Spring Tune-Up Specials!



K-D 382 Compressor for close quarters. Good on L-, valve-in-heads. Best all-around tool for 1956 Chrysler-built V-8's.



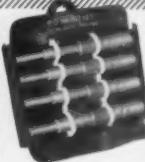
K-D Valve Grinders. Hand tools with replaceable, synthetic rubber vacuum cups, 1 1/4" diam. No. 503 (top), No. 506 (below).



K-D Hose Clamp Pliers removes, replaces wire clamps.

K-D TOOLS
you should have
in your toolbox!

FREE CATALOG—OVER 150 TOOLS
K-D MFG. CO., LANCASTER, PA.



K-D 812 Set. Precision ground, steel Valve Guide Drivers. Pilot diams: 5/16", 11/32", 3/8", 7/16". Plastic case.



K-D 430 Door Handle Tool. For all GM cars since '33; all Ford-built since '51. Saves upholstery, prevents flying springs.



K-D 435 Door Handle Tool. For all Chrysler-built since '55. Releases retaining spring so handle can be removed. Necessary!

FREE BULLETIN → No. 26-C gives you complete details on servicing valves in all 1956 Chrysler, Desoto, Dodge, Plymouth overhead valve V-8 engines. Write for yours.

Television Records Road Bump Testing

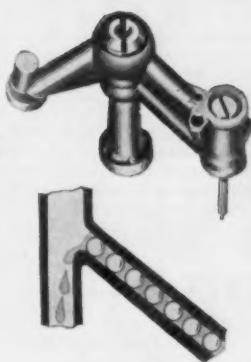
A small, rugged, bomb-shaped television camera gives General Motors engineers a picture of what goes on underneath an automobile when it's cornering sharply or bouncing over a rough test road.

The picture is transmitted through a closed TV circuit to a 14-inch monitoring screen in the rear of the test car.

This mobile TV system was developed at General Motors Technical Center by GM Engineering Staff's Test Facilities Group in cooperation with a TV camera manufacturer, General Precision Laboratory of Pleasantville, N. Y.

Engineers hail the results of the system providing quick answers in test work. Ordinarily they would use motion picture cameras for such visual aid in testing—and they still do—but working with films is slower and less flexible than live TV.

For watching the action of a car's suspension system, a TV camera is attached to the underside of a car's front or rear (Continued on page 142)



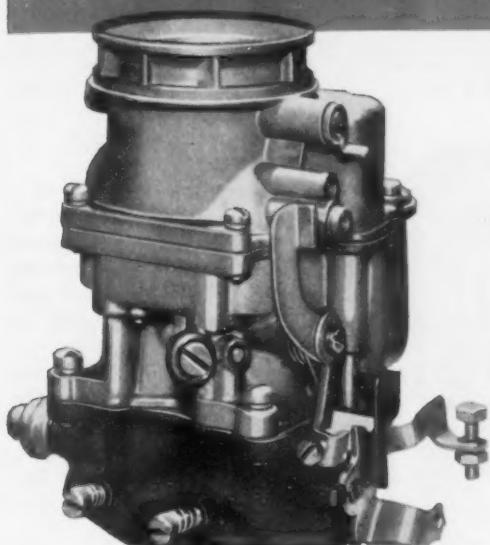
**OLD-STYLE
NOZZLE BAR**

Narrow restriction in main well of old-style nozzle bars allowed vapor bubbles to push fuel into manifold causing flooding and consequent hard starts.

**HIGH-LIFT
NOZZLE BAR**

Designed with larger area and straight vertical rises, high-lift nozzle bars allow vapor bubbles to rise into free surface where they break, preventing flooding, hot weather starting problems.

The feature that can't be built into previous model carburetors



FOR MORE THAN HALF-A-CENTURY
ORIGINAL EQUIPMENT MANUFACTURERS
FOR THE AUTOMOTIVE INDUSTRY

UNIQUE HOLLEY HIGH-LIFT NOZZLE BARS GIVE BETTER- THAN-NEW-CAR PERFORMANCE

You can give your customers a better-than-new-car performance with the completely-redesigned Holley R-713 carburetor. Only the R-713 has exclusive high-lift nozzle bars which can't be built into previous model carburetors. They virtually eliminate "vapor lock" and are re-located to assure instant starting. Here at last is a carburetor calibrated to the most exacting concepts of modern economy and performance and at little more than obsolete, old-style units.

The Holley R-713 increases your prospective market greatly, at the same time decreases your parts inventory. Because the R-713-AAS will fit every 1934-53 eight-cylinder Ford or 1939-48 Mercury, you have nearly seven million on-the-road prospects and you need only stock one part number.

See the Yellow Pages of your phone directory for the Holley distributor nearest you. He'll be happy to show you how to give customers better-than-new-car performance as well as increased profits for you at lower cost.

HOLLEY
Carburetor Co.

11955 E. Nine Mile Road
Van Dyke, Michigan

BT-23



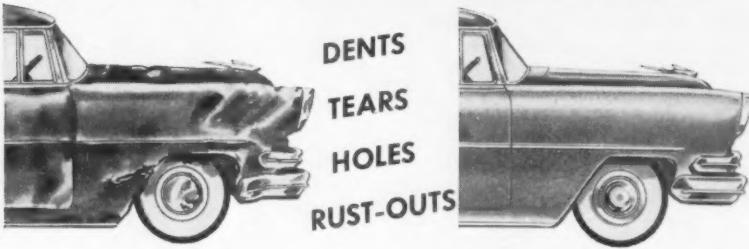
BOLTED TO THE underside of a test car's front bumper at left is a TV camera which "observes" action of the car's suspension system. The picture from the camera, now used by General Motors Engineering Staff at GM Technical Center, appears on a monitor screen in the back seat of the car, where an engineer can observe it. The TV camera gives engineers quick answers that ordinarily would take longer with motion pictures.

TV Test . . .

Continued from page 140

KwikMetal COLD SOLDER

WORKS FAST • NO MIXING!



KwikMetal Does It Best!

Repair Jobs Are Done Quickly, Profitably!

KwikMetal Cold Solder applies like putty, right from the can! Just apply and let dry . . . and it dries to a hard metallic finish ready for sanding and painting. You can apply

KwikMetal in the time it takes to mix other repair materials! And, one pound of KwikMetal does the work of six pounds of lead. This is why KwikMetal is the leader!

KwikMetal gives all these advantages

- rust-proof
- water-proof
- low cost
- easy to use
- won't jar out
- 1 lb. does work of 6 lb. lead

- no mixing
- no heat or flame
- no special equipment
- safe to use
- just apply—let dry
- no holes to drill for adhesion

Don't forget the handy KwikPatch Kit containing KwikMetal, Kwik-Solv Solvent, and a roll of economical KwikPatch Fabric Patch. Many sizes.

KwikMetal is COLD MAGIC! Send for FREE folder and price list on ideas for using KwikMetal!



ATOMIZED MATERIALS COMPANY, INC.

207-J Rouach Building

Pittsburgh 5, Pa.

bumper and focused on the portion of the suspension engineers wish to observe.

When the test is under way, an engineer observer sits in the back seat of the car and watches the remote action going on beneath him.

It is likewise possible to use such a system with the picture flashed to a large screen in an office or laboratory where a group of engineers can sit and watch the action on a car cruising along a test road miles away, just as doctors watch remote telecasts of surgical operations.

In addition to testing suspension systems in action, Engineering Staff men also have used their mobile TV unit for observing tire roll when a car is going around a corner.

Ab Jenkins

Ab Jenkins died August 9 of a heart attack in Milwaukee. The 73-year-old race driver was a former mayor of Salt Lake City and the holder of half a dozen speed and endurance marks still standing at the time of his death.

Jenkins was instrumental in getting national recognition for the Bonneville Salt Flats. His record attempts there aroused the interest of such racing notables as England's Sir Malcolm Campbell and John Cobb.

Jenkins just recently set a new 24-hour distance record at the Utah salt flats. He was chairman of the Auto Racing Safety Council and the Rocky Mountain Zone Supervisor for NASCAR.

To Help You SELL WEED CHAINS...

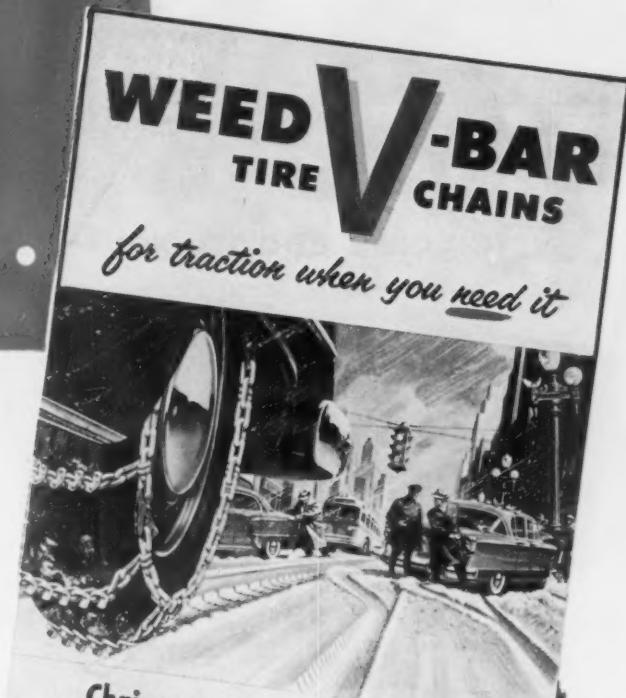
• Powerful WEED advertisements like this are running this fall and winter in:

Saturday Evening Post
Life
Collier's
Business Week

They'll help you sell WEED V-BAR TIRE CHAINS—traction you can trust... traction *when you need it!*

**Check Your Stocks
... Order Your
WEED
CHAINS
NOW!**

• Make sure you're ready for that big first-snow rush. And be sure you have plenty of chains for those new wheel sizes. Check your stocks... order from your jobber... now!



Chains are Best on Snow or Ice

Here's traction you can trust *when you need it*—to stop safely, and to keep from getting stuck. Just look at the V-Bars on these genuine WEED CHAINS. Slanted left and right, 288 or more steel gripping points stop you shorter, straighter, safer. And Zip-On Appliers help you put on chains easier and faster—you just drive your car into the chains. Get your WEED V-BAR TIRE CHAINS and Zip-On Appliers today—while dealers' stocks are complete.



Use Year-round Tires When Roads are Clear

Carry WEED CHAINS in the trunk and enjoy the complete comfort of your modern car and its year-round tires. Then, when roads are icy or snowy, your chains give traction you can trust. When the need is past, take them off till next time. Drive economically, comfortably, safely—all year round!

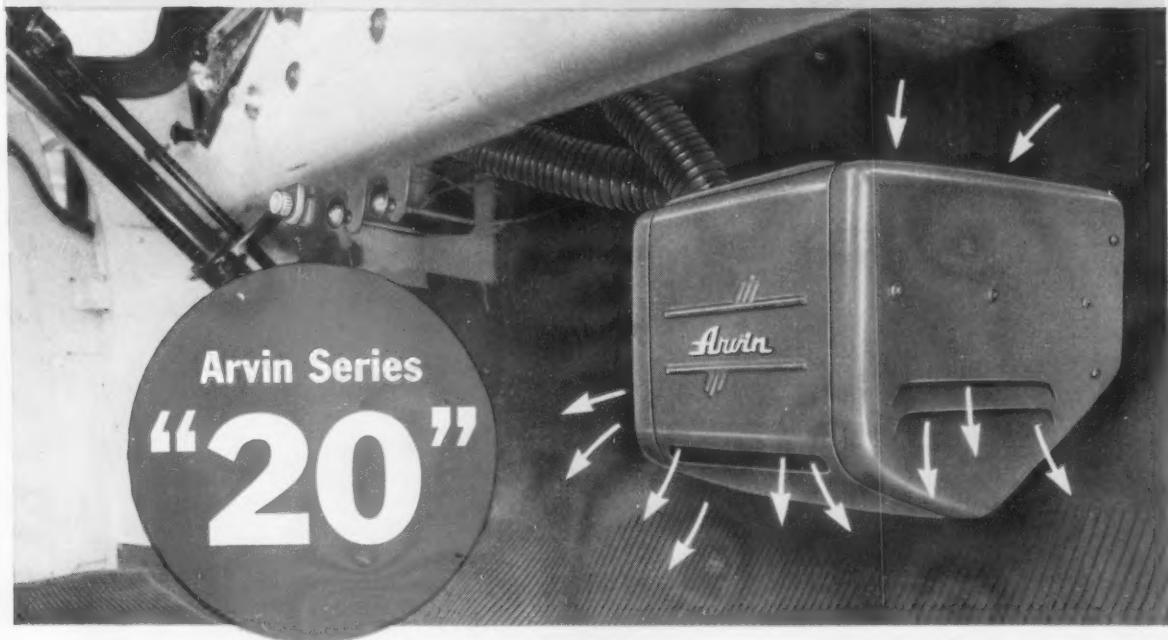
ACCO

American Chain & Cable Company, Inc., Bridgeport, Conn.
In Canada: Dominion Chain Company, Ltd., Niagara Falls, Ont.
In Business for Your Safety

Arvin

HOT WATER CAR HEATERS

for cars and trucks — 12 and 6 volt models



Finest universal recirculating heater-defroster —priced way below car factory heaters!

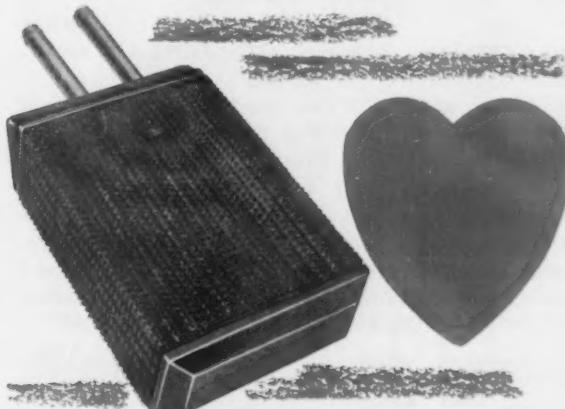
Fits most makes of cars and trucks, new or old. Takes little space. Easiest-to-sell car heater on the market—because it combines proved efficiency, compact space-saving design and terrific low-price appeal, backed by the Arvin reputation for top performance and quality. Its low-price gives you a trading edge on close deals, a profit edge on good deals. And it's a perfect replacement heater for used cars and trucks. Quick, easy installation.

FREE Bright, sales-winning wall or window poster! Big, 17x22", 2-color streamer **FREE** with your Arvin Heater order.

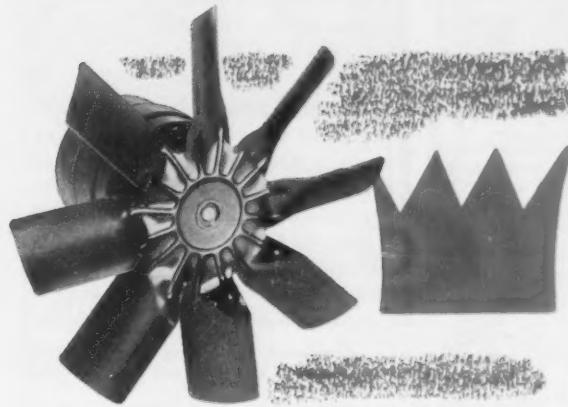


Arvin FIRST IN CAR HEATERS SINCE 1921

TREMENDOUS HEAT AT TREMENDOUS SAVINGS



Big heat from its big heart



... and a king-size fan

The heart of a heater is its core, and the Arvin "20" has a BIG heart—a honeycomb core, 6x8x $2\frac{1}{2}$ ", with 2800 square inches of radiating surface. The water changes completely every two seconds at normal driving speeds—distributes heat fast! The powerful 8-blade, 7-inch fan moves 150 cubic feet of warm air every minute. Circulates all the air in an average-size sedan or truck cab every two minutes for continuous, thorough heating comfort.

SEE YOUR ARVIN DISTRIBUTOR

Electronics and Appliances Division

Arvin INDUSTRIES, Inc.
Columbus, Indiana



Pressure-Forced Fresh-Air Heat and Defrosting

As a fresh-air heater, the Arvin "55" fits 1955 and 1956 Ford* and Chevrolet passenger cars. It has a high-speed, impeller-type blower, operating up to 3200 r.p.m., which pressure-forces big heat volume throughout the car and to the defroster—within seconds. The large core refills with hot water every 2 seconds. With heater shut off, summer vent provides fresh air circulation for cooling. Can be completely installed in '55 or '56 Ford and Chevrolet cars in little more than an hour.

As a recirculating heater, the Arvin "55" fits Plymouth as well, and can be installed in even less time. Defrosting kit only \$4.95 list.

List price only \$44.95

Fresh-air kit including defroster \$9.95 extra.

LIBERAL DEALER DISCOUNT

12 volts—Model 55-12 6 volts—Model 55-6

*1956 Ford without radio

Beacham Sees Bright Future for Economy

A prosperous future in which Americans may buy as many as 9½ million new cars a year was predicted recently in Savannah, Ga., by Charles R. Beacham of Dearborn, Mich., general sales manager, Ford Division of Ford Motor Company.

He said the South's economy is

growing twice as fast as the rest of the nation, and people in the Southern states should enjoy correspondingly greater gains.

Mr. Beacham, who since January has directed the sale of more than 1,000,000 Ford cars and trucks, visited Savannah as a featured speaker at the Georgia Automobile Dealers Association convention. It was a homecoming trip for the auto executive, who was born in McRae, Ga., and

started with Ford 30 years ago calling on dealers in the south Georgia territory.

He described the American economy as "bursting with growth and change."

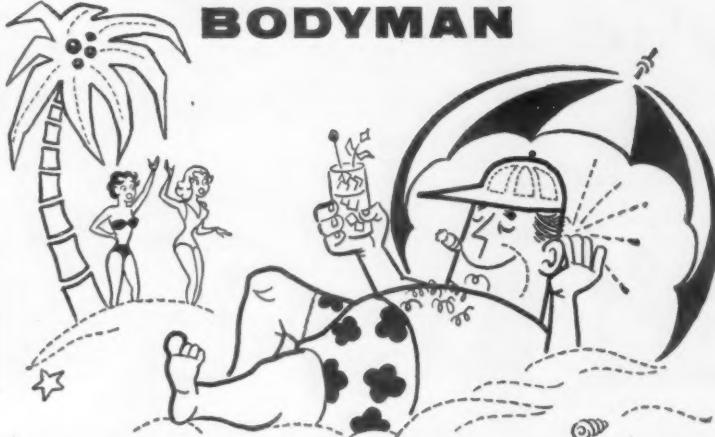
"The increased amount of spending money in the hands of the average man next year will give him a standard of living about 60 per cent better than his father had 30 years ago. You remember that those were the good old days we called the 'roaring twenties,'" Mr. Beacham said.

"In 1957, we expect that America's output of goods and services will reach an all-time peak, about 4½ per cent above this year, and near a total of \$428 billions.

"If an automobile dealer asked me today whether he ought to stay in the business, I would tell him with full confidence that the future never was brighter," Mr. Beacham declared.

Ford Division's long range forecasts, he said, point to 10,000,000 two-car families by 1965, with a total of 66,000,000 cars on the new roads that will be built in the next decade.

Picture of a Schofield BODYMAN



SCHOFIELD® PRECISION BODY PANELS . . .

Used by successful autobody men for better, faster, more profitable repair jobs.

With Schofield Body Repair Panels, you can save hours on a job, make a better looking repair, charge your customer less and still make more money on the deal!

Your Schofield Jobber has over 400 different kinds of repair panels and body sections . . . each tailor made for exact fit. Let him help you make your next body repair job the most profitable one you've ever had.

Remember, look for the Schofield label on every replacement panel you buy. If it doesn't have the label, it's not a genuine Schofield panel!

Write for your personal copy of the Schofield catalog today!

JOBBERS: Choice territories still available. Write or wire for full details.

SCHOFIELD MFG. CO.
WORLD'S LEADING MANUFACTURER OF AUTOBODY REPLACEMENT PANELS

1151 E. 222nd ST. — CLEVELAND 17, OHIO

NAME THE
SCHOFIELD BODYMAN
AND WIN \$100
GET ENTRY BLANKS
FROM YOUR
JOBBER OR
DIRECTLY FROM THE
SCHOFIELD MFG. CO.



STUDEBAKER has introduced seat belts which are attached to the car door. According to Studebaker engineers, the new method of attachment was designed for driver convenience while providing the same seat belt safety factor as the usual procedure of attaching seat belts to the floor.

"It's NO PROBLEM to Replace MUFFLERS With This NEW HOLMES TOOL*!"

Holmes now offers a new tool that eliminates the difficulties usually encountered in the replacement of mufflers and tail pipes. The tail pipes of welded exhaust systems can be readily cut with only a quarter swing of this tool. Frozen joints of clamp type mufflers can be expanded and broken loose by use of serrated rollers which come with the kit. The Muffler Tool can be used to expand and loosen the joints, or as a cutting tool for replacement with a clamp-on-type muffler. Here's a truly valuable tool much needed by every mechanic, shop and service station. Furnished complete with interchangeable expander rollers and cutting wheels.



CUTTING PIPE — When assembled with cutting wheels, MUFFLER TOOL will quickly cut through one-piece exhaust system with only a short swing of the handle.



SEPARATING JOINTS — By clamping expander rollers near muffler and operating TOOL, bond between joint is easily broken without damage to mating parts.



*Patent Pending

HOLMES SERVICER* For TESTING And RECLAIMING HYDRAULIC VALVE LIFTERS

Test full set of lifters in 10 to 15 minutes providing accurate leak-down test before re-use.



**LIST
\$98.00**

The Holmes Servicer* is a new precision machine that takes all of the guesswork out of servicing Hydraulic Valve Lifters. With this machine, all lifters, even those stuck inside the tappet body, can be easily taken apart, cleaned, re-assembled and tested. The leak-down test provided assures the use of *only* those lifters in perfect working condition. It prevents the scrapping of useful parts. Saves the customer money. Saves the shop time and trouble . . . and soon pays for itself, with increased profits and customer satisfaction.

HOLMES Universal Joint Tool*



FOR DISASSEMBLY

FOR REASSEMBLY

Here's a new tool that saves time and trouble when lubricating or repairing a Universal Joint. With this tool, a mechanic can quickly remove the retaining rings and easily force out the bearings . . . without damage to parts or the use of a metal drift and hammer to drive out the press-fit roller. The tool can be used to press out yoke either under the car, without removing propeller shaft, or in a shop vice as shown. Use of this tool saves from 30 to 45 minutes and is a valuable asset to any shop or service station.

Order from your jobber . . .



Or Write Factory Direct

ERNEST HOLMES COMPANY

2505 EAST 43rd STREET

CHATTANOOGA 7, TENNESSEE

AMC Introducing New V-4 Engine

By Joseph Geschelin,
Engineering Editor

Supplementing the recent announcement by American Motors Corp. of its new aircooled V-4 engine, it is of interest that although the company has groomed the new family of engines for

possible military use, a fairly large number of inquiries already have been received from manufacturers of industrial and construction equipment indicating considerable interest. As mentioned in the initial release, AMC has, in effect, a standard aircooled cylinder which can be employed in engines of V-type or opposed piston type, in arrangements of two, four, six, or eight cylinders, for passenger cars and other applications.

Several prototype V-4 engines are undergoing dynamometer endurance testing compatible with military engine test procedures. The basic cylinder is 3.25 in. bore x 3.25 in. stroke with a displacement of 108 cu. in. for the V-4, developing about 62 bhp with compression ratio of 7.5 to 1. The engine will operate on regular service station fuels and, in fact, is being tested with a military type fuel on which it operates satisfactorily.

Die-Cast Aluminum Parts

With the cooperation of the Aluminum Company of America, die-cast aluminum parts are contemplated for all of the major parts of the structure including: individual cylinder barrels with cooling fins, cylinder heads with cooling fins, cylinder block, cylinder head covers, timing gear housings, blower support bracket. The intake manifold, too, is of aluminum but because of its jacketing will have to be a sand casting. Total weight of the V-4 engine is 200 lb., exclusive of electrical equipment. The weight of electrical components has been omitted because of the unusually heavy items required for the military 24-volt system. For automotive and industrial use the engine can be fitted with the conventional 12-volt ignition system.

It may be noted that individual cylinder barrels have chromium-plated bores, a coating of hard chromium about 0.0035 in. thick. Cylinder heads and cylinder covers on the V-4 take two bores to provide a rigid upper structure. Eatonite inserts are employed for valve seats, and a helicoil insert for spark plugs.

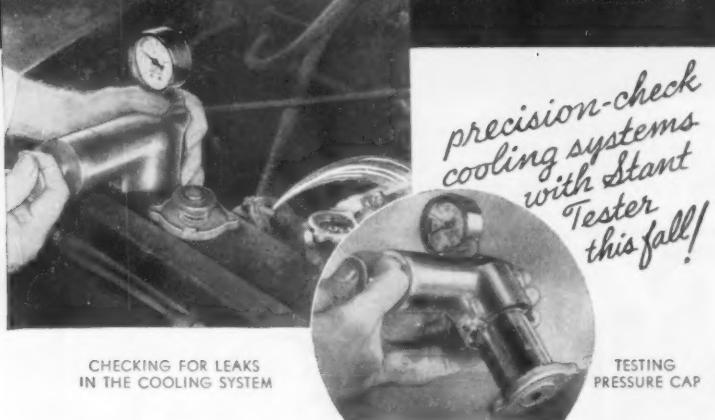
Pistons are of aluminum alloy with three rings: two cast iron compression rings and one steel oil ring.

A single-barrel downdraft-type carburetor is used, the model having an exceptionally low silhouette. Copper-lead precision bearings are used for the mains and connecting rods.

The crankshaft is of drop-forged steel and counterweighted

(Continued on page 150)

prove car needs and they'll buy



CHECKING FOR LEAKS
IN THE COOLING SYSTEM

TESTING
PRESSURE CAP

Anticipate and correct your customer's winter cooling system troubles with a Stant Tester. Build profits and customer confidence by sales of new caps, hose, clamps, chemicals, radiator and water pump repairs... when you show him the need. The use of the Stant Tester is a "must" with your Guaranteed Winterizing Program. Protect yourself before you install the coolant.

money-making tool

Use this accurate rugged instrument for long trouble-free service. There's years of engineering research behind it. Exclusive Stant features: wear-proof, accurate cams and cam lugs... convenient right angle design... accurate, no guess-work, fool-proof gauge... manual relief valve... heavy cast adaptors. Write for catalog today... naming jobber.

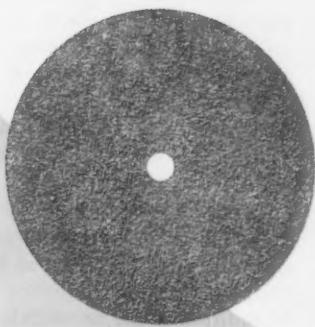
STANT MANUFACTURING CO., INC.
Connersville, Indiana



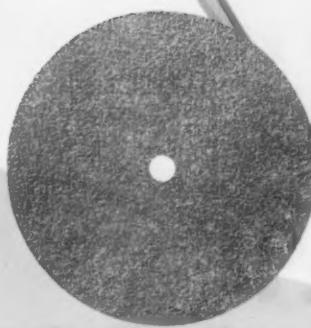
**Used on America's Finest Automobiles
as Standard Equipment for a generation**

You can't miss!

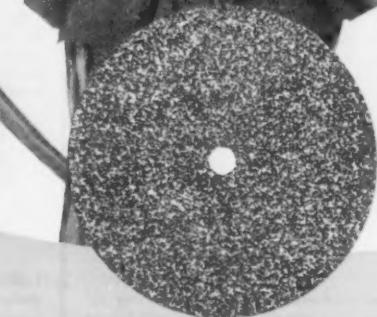
WHEN IT'S A
METALITE®
FIBRE DISC!



GREEN-BAK



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OPENKOTE

They're all tops in performance

BEHR-MANNING PRODUCTS: Coated Abrasives • Sharpening Stones • Backed Tapes
NORTON PRODUCTS: Abrasives • Grinding Wheels • Grinding Machines • Refractories



BEHR-MANNING Co.
TROY, N.Y.

A DIVISION OF **NORTON** ABRASIVES

In Canada: Behr-Manning (Canada) Ltd., Brantford. For Export: Norton Behr-Manning Overseas Inc., New Rochelle, N.Y., U.S.A.

A-5

New Engine Continued from page 148

and connecting rods are made of steel forgings. Hydraulic valve tappets are specified as standard equipment. The engine has full pressure lubrication.

A large capacity blower is mounted at the front of the engine, the air stream being directed through ducting at the Vee to sweep the cylinders and heads,

exhausting through openings on the outside. The engine is provided with an oil cooler which is located in the Vee where it is swept by the air stream.

The camshaft is located in the center of the Vee and has the usual arrangement of pushrods to the overhead valve mechanism. Camshaft drive is by means of a

steel gear on the crankshaft meshing with a molded phenolic type gear on the camshaft.

GM Releases Report On Driver Trng. Aid

General Motors contributed more than \$460,000 in support of driver education in the nation's schools for the 1955-56 school year, it was announced recently by GM President Harlow H. Curtice.

Under its driver training assistance plan, GM awards auto dealers \$125 for each new automobile loaned to schools for driver training. This allowance helps dealers offset vehicle maintenance and reconditioning costs.

"The automobile is very much a part of American youth. In a society that depends most extensively on motor vehicles, it is important that today's youth begin early to learn the fundamentals of driving safely and efficiently," Mr. Curtice said.

"Driver education now is an essential segment of the secondary school curriculum and fulfills an important and growing need. In addition to the immediate benefits gained by teaching students safe driving techniques and instilling driver responsibility in classrooms, we find that driver education has continuing and far-reaching effects," he said.

Surveys illustrate that boys and girls with authorized driver education in high schools possess substantially better safety records than those who do not receive instruction.

"According to AAA figures published by the National Commission on Safety Education, in Cleveland, trained high school boys have half as many accidents as untrained youths. And an AAA three-year study conducted by the Pennsylvania State Police showed that accidents involving youth were cut in half and arrests decreased to a third as a result of driver education," Mr. Curtice said.



Each year's new models make your job more difficult. Today more than ever the right tools will save hours of time plus parts and reduce unnecessary delays. These are only a few of the many outstanding OTC special tools that do tough jobs fast.

DISTRIBUTOR LOCK NUT WRENCHES



A new set of five distributor lock nut wrenches fit practically all '55 passenger car models. Make an otherwise tough job simple.

OVERHEAD VALVE TAPPET ADJUSTING TOOL



Adjust overhead valve tappets with any $\frac{1}{2}$ " square drive socket. Easy to use with handle set at 15° for clearance over hot manifolds and other obstructions.

CHRYSLER DOOR HANDLE REMOVING TOOL



New door hand window crank removing tool for all Chrysler built cars. A terrific time-saver.

UNIVERSAL CLUTCH ALIGNING SET



A special set of tools designed to align single disc clutches on any passenger car or truck. Eliminate time and effort of tearing apart transmissions.

HEAD BOLT WRENCHES



Twelve new head bolt wrenches carefully designed, forged and heat treated to do a precision job of torquing head bolts on a wide variety of auto, truck and tractor engines.

OIL FILTER RATCHET BOX WRENCH



Handles oil filter service jobs on most late model passenger cars. Fully heat-treated highest quality alloy steel with thin ratcheting action head and double hex 12 point opening for sure handling in cramped quarters.

See your jobber or write us

OWATONNA TOOL COMPANY
321 CEDAR STREET • OWATONNA, MINNESOTA



IMPORTANT ANNOUNCEMENT FROM DU PONT

Now you can GUARANTEE protection against loss of anti-freeze

The surest way to sell extra winterizing service is to guarantee the extra protection this gives. And now Du Pont offers everything you need to guarantee full protection against loss of anti-freeze. The plan insures sale of the profitable extras, Du Pont Fast Flush and Cooling System Sealer when you sell anti-freeze. This protects your customers more completely and brings you *three* profits instead of *one*. You'll find full instructions on how to set up the plan, plus eye-catching display banners and guarantee certificates in the free Guarantee kit. Ask your wholesaler for it and get started on your GUARANTEED PROTECTION plan now. It's a good way to guarantee extra profits for you. Make still more profit with the Du Pont fall deals!



REG. U.S. PAT. OFF.

BETTER THINGS FOR BETTER LIVING . . . THROUGH CHEMISTRY

Here's your sales-pulling Guarantee promotion:



Colorful window banners



Guarantee certificates for customers



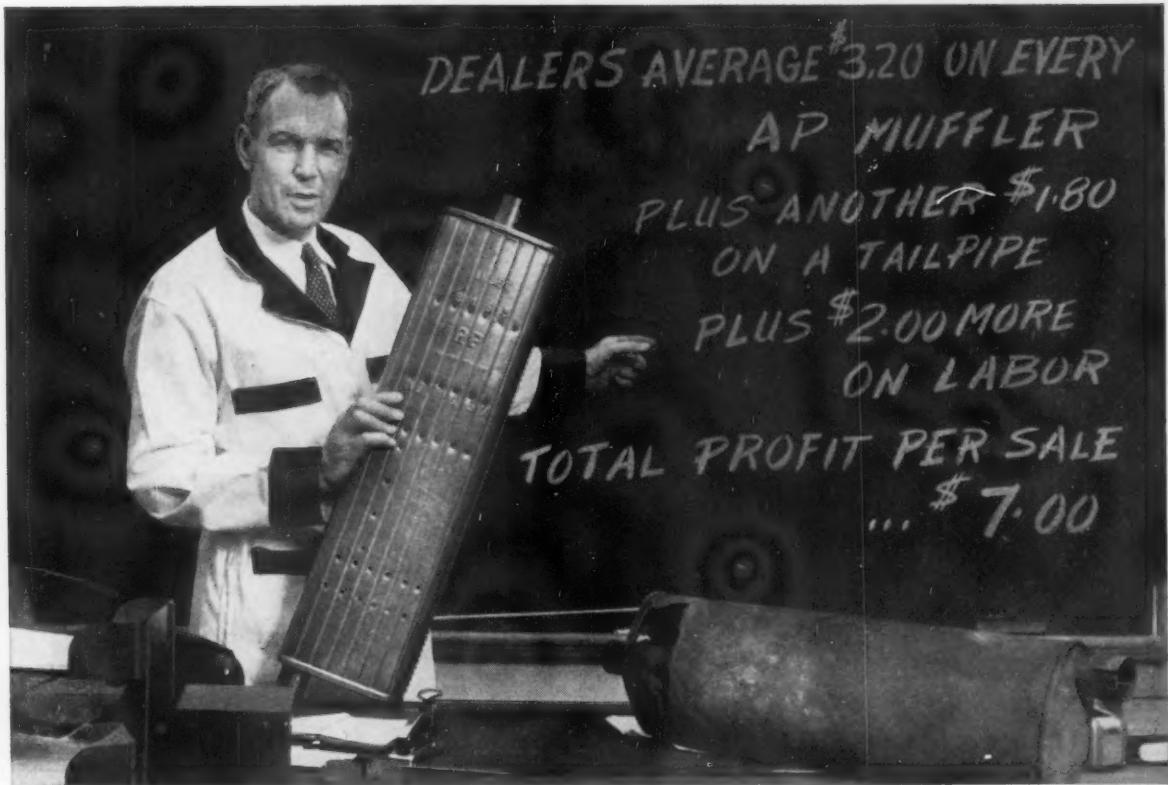
Full details on how to start your Guarantee plan

D U P O N T N ° " 7 " P R O D U C T S

E. I. du Pont de Nemours & Co. (Inc.), Specialties Sales, Wilmington 98, Delaware

TAP, LOOK AND LISTEN YOUR WAY

Become an AP Muffler Specialist and



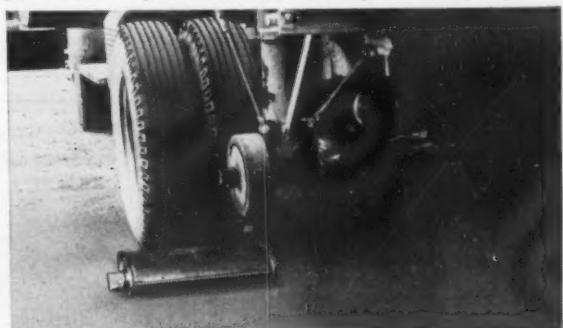
TAP, LOOK and LISTEN is the slogan of a hard-hitting program that's helping AP Muffler Specialists make big profits in a doubling market (this year the big majority of car manufacturers will feature dual exhaust systems). Profit from this program yourself. Register with your AP wholesaler, get a basic minimum stock, and examine every muffler that comes into your shop. Do it systematically and you'll make at least six extra sales a week for the next 50 weeks—a total of \$2100 extra profit—because *one out of every two cars* you service will need a muffler or a pipe*—or both.

The advance-design AP muffler has up to 40% heavier steels, double crimp-locked seams, high-frequency-control intermediate shell. Seam-welded inner tubes with extruded holes make it practically clogproof. Its patented $\frac{1}{3}$ thicker "Air Liner" shell—featuring on more than 70% of all AP mufflers—creates sound-deadening chambers that insulate against both heat and noise. And AP provides asbestos liners wherever needed—plus corrosion-resistant coated steels for many numbers. In recent tests made by Motor Vehicle Research, an independent testing laboratory, AP surpassed the three leading competitive mufflers, including the car factory replacement—thereby winning the coveted MVR "Certified Test

*Shell Oil survey of retail potential for 1956

Award." It proved convincingly that AP mufflers are engineered for longer life, plus greater silence and lower back pressure.

So install AP. Give your customers—at no extra cost to them—the power, mileage and long life they want—plus better protection against carbon monoxide gas. Ask your jobber to show you the AP "Inside Story." It's an eye-opener.



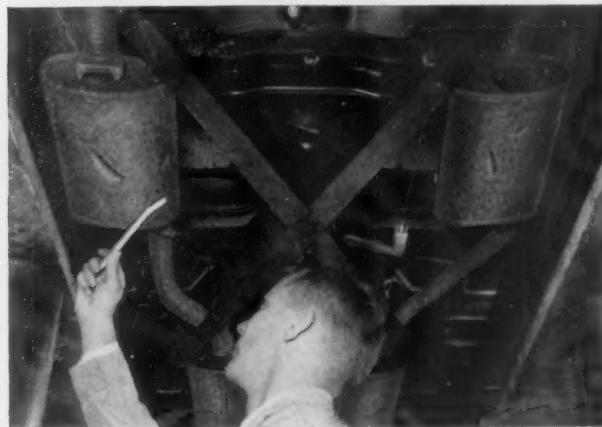
In recent tests made by Motor Vehicle Research, the AP passenger car muffler withstood this crushing 4720 lb. wheel load, and is practically as good as new.



LONGER-LASTING MUFFLERS—DESIGNED FOR TODAY'S

TO BIG MUFFLER PROFITS WITH AP

make at least \$2100 extra a year



Note the AP muffler removal tool shown above. It cuts the average installation time in half. Ask your AP wholesaler about it. Note also the four mufflers in this Lincoln exhaust system. They give some idea of how the muffler market is expanding.



This mobile merchandiser of basic muffler stock has proved to be an extremely effective aid in the sale of AP mufflers. It has good display value and can be easily moved in and out on its wheeled rack. Get one. Available from your AP wholesaler.

AP PROVIDES YOU WITH EFFECTIVE SALES AIDS...BACKS YOU UP WITH DRAMATIC, HARD-SELLING NATIONAL ADVERTISING



Your initial sales package will include a "How to" booklet, posters, post cards, inspection tags, a decal, a catalog, and price sheets. Then AP mails direct to you a constant flow of additional sales aids, and of up-to-date price and catalog data.



Dramatic ads in these publications will be read by hundreds of your customers and prospects. They'll do a lot of advance selling for you.

THIS FREE SIGN IDENTIFIES YOU

Put it where it will be seen. Then TAP, LOOK and LISTEN the easy AP way for muffler profits.

THE AP PARTS CORPORATION
3-V AP Building, Toledo 1, Ohio
Mufflers and Pipes • Miracle Power • dgf 123



HIGH-COMPRESSION ENGINES



11th Glidden Tour Revival on Sept. 23

Antique automobile enthusiasts are now preparing their old cars—about 250 of them, including 70 different makes—for the eleventh annual Glidden Tour revival, a unique event which demonstrates to modern America what motorizing and motors were like in grandfather's day.

Such venerable vehicles as the Stanley Steamer, Maxwell, Winton, Locomobile, Pierce-Arrow and Peerless, which have passed out of production and normal use, will be out in force again. When their owners get them in shape, chances are they will look and sound as good as new.

This year's tour, sponsored by the Veteran Motor Car Club of America, will be held from Sep-

tember 23 to September 29. Headquarters for the event will be the well known resort at French Lick, Indiana.

Dr. Wendell Stadle, of Battle Creek, Michigan, is chairman of the tour committee. The revivals, held first in 1946, are patterned after the original Glidden Tours conducted by the American Automobile Association from 1904 to 1913 to prove the reliability of the horseless carriage.

Take time to think—it is the source of power.

FLEXON thermostats...

—the models with SIX APPEAL

What is Six Appeal? It's the **Flexon 6 for '56**, the six models of Flexon 'stats that service 91% of all cars on the road today. The **Flexon 6 for '56** practically eliminates inventory and stocking problems because there's no duplication of coverage—no outdated models that operate in only one type of cooling system.

The Flexon 6 are the least expensive pressure system 'stats on the market—you get faster turnover for maximum profit.

Check your Flexon Jobber for full information; then go with the **Flexon 6 for '56**.



Flexonics Corporation
AUTOMOTIVE DIVISION

1398 S. THIRD AVENUE, MAYWOOD, ILLINOIS

FORMERLY CHICAGO METAL HOSE CORPORATION

Manufacturers of thermostats and flexible metal tubing.
Plants at Maywood, Elgin, Rock Falls and Savanna, Ill., and Memphis, Tenn.
In Canada: Flexonics Corporation of Canada, Ltd., Brampton, Ontario



T-40

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Combustion Chamber Unburned Fuel Seen

A "thin skin" of unburned fuel around the walls of an automotive engine's combustion chamber has been observed photographically by General Motors Research Staff engineers.

Reporting before the recent 6th International Symposium on Combustion at Yale University, Wayne A. Daniel of GM Research Staff's Fuels and Lubricants department said that although engineers have known for at least 20 years that a small portion of fuel passes unburned through an engine, its source has never been established.

He said this "thin skin" or "quench zone"—2 to 15 thousandths of an inch thick—appeared in photos of a small segment of the combustion chamber wall. The photos were taken through a transparent quartz "window" in the head of a laboratory test engine.

They showed that when the air-fuel mixture is ignited by the engine's spark plug, the flaming mixture fans across the combustion chamber until it almost touches the relatively cool chamber walls. Next to the walls the mixture does not burn.

The GM Research engineer said this "quench zone" was observed even when the engine was operating under accelerating and cruising conditions, when concentrations of unburned hydrocarbons under such conditions were less than 5 per cent.

SAFE BUY!

Safest you can sell
of all regular and
premium bonded linings

GRIZZLY

Softibond[®]

BRAKE LINING

Regular or premium . . . the brake lining your customers can trust to stop with safety . . . the lining you sell with safety is GRIZZLY SAFTIBOND! They're safer because they're extra-tough, extra-dense bonded linings especially designed for modern driving conditions . . . glazeproof, waterproof, and fade-resistant. GRIZZLY SAFTIBOND premium lining is the finest made . . . a tougher lining that provides additional safe mileage, in spite of power brakes, automatic transmissions and high-powered engines. GRIZZLY SAFTIBOND regular lining gives more dependable, more positive braking action under all normal "stop and go" conditions. Premium or Regular, the safest bonded lining you can sell is the GRIZZLY brand . . . your customers always appreciate its better quality. Get the complete story from your Grizzly Distributor . . . now!

GRIZZLY MANUFACTURING DIVISION

Paulding, Ohio

A special bonding agent is applied at the factory, providing exactly the proper application for the thermosetting process that assures perfect end-to-end seating of brake lining against brake shoe. Lining will not separate, swell, or work loose!



GRIZZLY
SAFTIBOND
BRAKE SHOE SETS



GRIZZLY
BRAKE LINING
FOR RIVETING



GRIZZLY
BRAKE LINING
FOR LIGHT TRUCKS



GRIZZLY
SILVERTIP
BRAKE BLOCKS

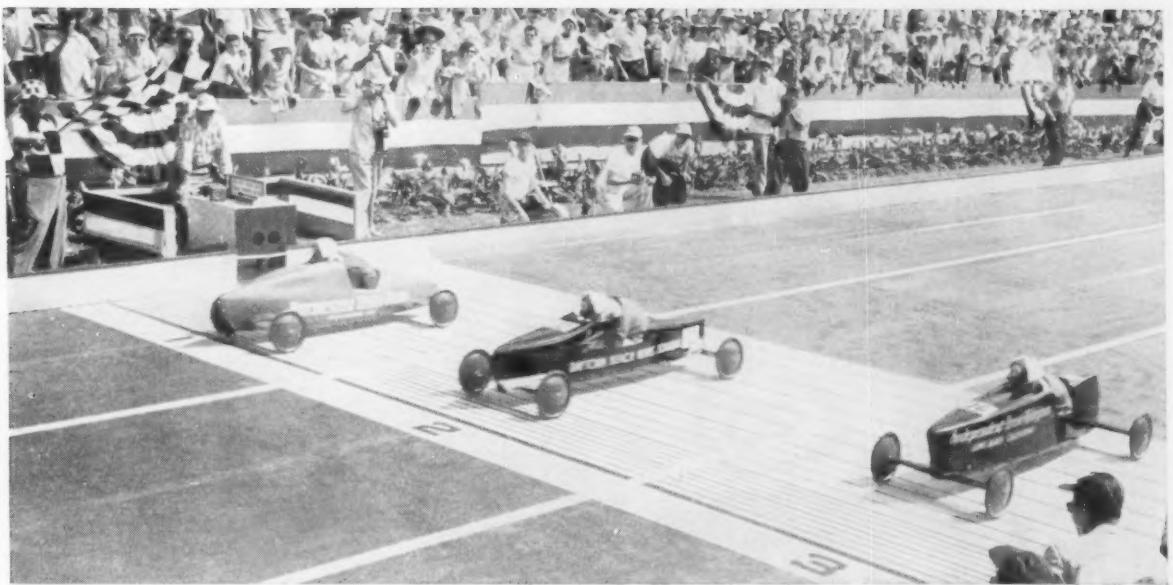


GRIZZLY
BRAKE LINING



The pioneer of bonded
linings for the Automotive
Replacement Parts Industry





19th ALL-AMERICAN SOAP BOX DERBY

Norman Westfall, 14, Rochester, N.Y., wins 19th All-American Soap Box Derby and top prize, a \$5,000 4-year scholarship, awarded by Chevrolet, before record crowd of 65,000 at Akron, Ohio, August 12.

RECORD CROWD SEES ROCHESTER, N.Y., BOY WIN '56 FINALS



E. N. Cole, vice president of General Motors and general manager of Chevrolet, presents champ with first-place trophy.

Thanks to the dedication of the many people representing public-spirited newspapers, radio and television stations, and civic and fraternal organizations, the colorful Soap Box Derby has become one of America's most inspiring and constructive youth events.

The untiring efforts of these people are gratefully acknowledged and appreciated. . . . Chevrolet Division of General Motors.



Guest Derby celebrities included: Snookie Lanson, Joe E. Brown, winner of the Oil Can Race, Art Baker and Roy Rogers.



W. E. Fish, general sales manager of Chevrolet, presents champ with scholarship award at the Derby "Banquet of Champions."



Just what is an "adjustable" shock absorber?

In one sense, *every* first-quality shock absorber made today is "self-adjusting." Because, today, virtually all shocks incorporate spring-actuated valving. Within a pre-calibrated range of control, these spring-loaded valves compensate for varying hydraulic demands created by road and load conditions. In that sense, *all* Gabriel shock absorbers are "adjustable," and have been for years.

But it was not until Gabriel perfected and marketed the AjustOmatic that you could offer your customers adjustable ride control —in a choice of three ranges.

The Gabriel AjustOmatic is different from any other shock absorber on the market today.

You can, in less than a minute, select and set for every customer *his kind of ride*—for his kind of car and his kind of driving. You do the adjusting: "soft" for ultimate comfort, "medium" for greater stability than with standard equipment, "firm" for utmost stability.

There is a ready, steady market for adjustable shock absorbers today. Don't be misled into giving your customers something less! Ask your Gabriel jobber for new fact folder giving full details.

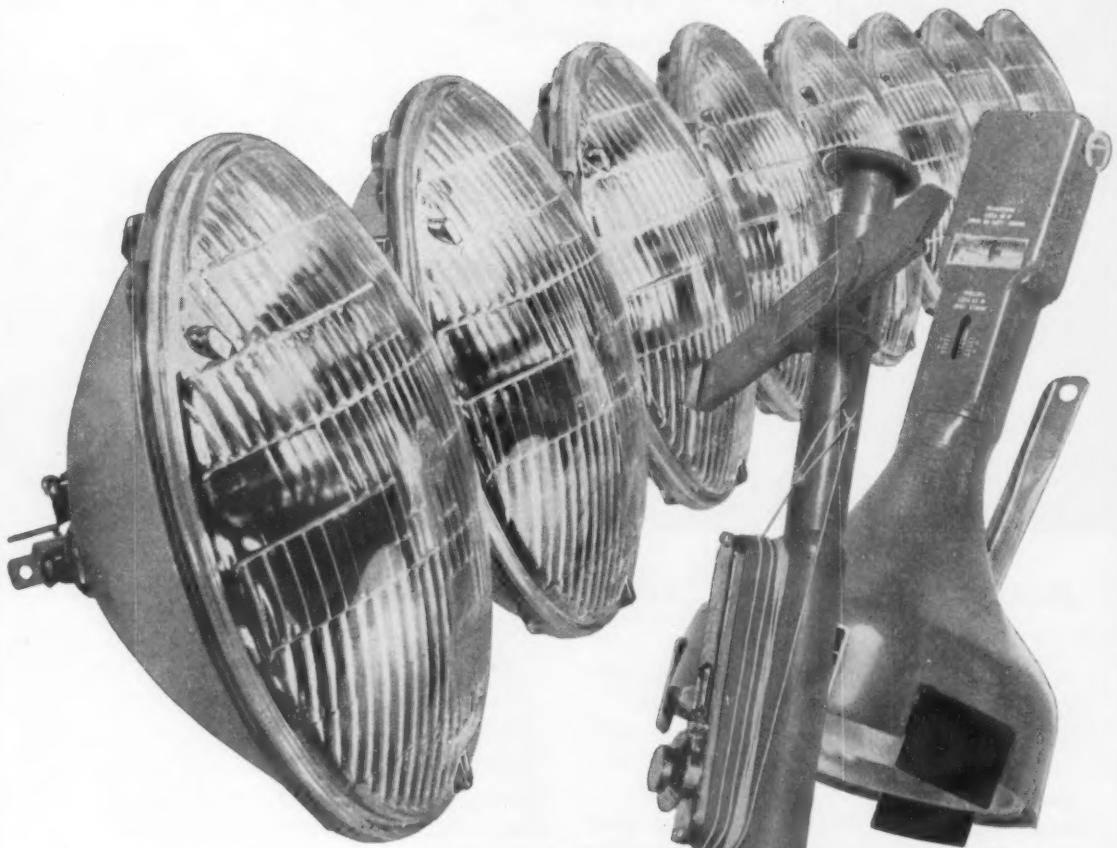
MAKE \$30-\$40 A DAY! Get a new, Gabriel Shock Tester. Tie in with powerful national advertising featuring AjustOmatic this month. Show the need—sell the deal!

© 1956 The Gabriel Company

LEV-L-LITE or TRULITE

HEADLAMP AIMER

G-E Aim-Right Headlamp Deal



A \$41¹⁴ value for only \$28⁹⁵*

YOU SAVE OVER

\$1200

▲ LEV-L-LITE

Choice of Aimers

▼ TRULITE



Both feature leveling devices!

Both will check and aim any sealed beam headlamp on any car!

and 8 G-E *All-Weather* HEADLAMPS for (with Aim-right Gizmos)

only \$28.95*

A \$41.14 value
... you save
over \$12.00!

4 Big Reasons why
you should get in
on General Electric's
Aim-Right Headlamp Deal

1. You sell more headlamps in pairs
2. You make more money because you profit on aiming jobs, too
3. You establish yourself in the profitable business of aiming
4. Your aimer will help build continuing sales



Watch for this Headlamp Profit Plan

You'll soon receive a complete and detailed selling plan that will help you sell more pairs of G-E *All-Weather* Headlamps—as well as keep your aimer busy and profitable all year 'round. It's being mailed to you about Sept. 15th—so watch for it—it's a money maker!



"Cheyenne" Rides for General Electric

About 27 million people will see G-E *All-Weather* Headlamp commercials—Oct. 23 and Nov. 6—on General Electric's new television show, Warner Brothers Presents "Cheyenne". The show appears on 117 ABC-TV stations at 7:30 p.m. EST on Tuesdays starting Sept. 25. "Cheyenne" will help pre-sell your customers.



G-E Advertising Builds Brand Preference

During October and November, G-E's national magazine advertising will appear in Saturday Evening Post, Collier's, Look, Popular Science, Popular Mechanics, Farm Journal and Progressive Farmer. General Electric advertising sells *All-Weather* Headlamps in pairs, so display and sell them in pairs!

Don't delay! Ask your wholesaler salesman about the G-E AIM-RIGHT HEADLAMP DEAL today sure!
Offer expires November 30, 1956!

*Suggested dealer net cost.

GENERAL ELECTRIC



Champion service engineer, Robert Dale (left), checks ignition timing with Harry Snyder, for 25 years an operator of a successful Toledo garage.

Champion's service engineers work full time to improve engine performance

Champion service engineers go wherever there are spark plugs—work with fleets, oil company dealers, ignition shops, municipal groups, auto dealers and others. Their job is to help make sure that the entire ignition system—including spark plugs—operates at peak efficiency. Very often when a plug appears to be misfiring, other conditions—such as burned points, corroded connections, faulty cable insulation, improper timing—can be causing the trouble.

If you call on our sales representative, in most cases he can handle such problems himself immediately. From his own experience, too, he will know if Champion's district service engineer is required.

Commonly encountered problems and their solutions are contained in a bulletin, "The Service Corner," that is widely distributed by Champion. In it, Champion makes the greatest

wealth of spark plug knowledge in the world available to help solve your problems. If you would like to receive "The Service Corner," write to Champion Spark Plug Company, Dept. A-2, Toledo 1, Ohio

*Sincerely,
Jim L*

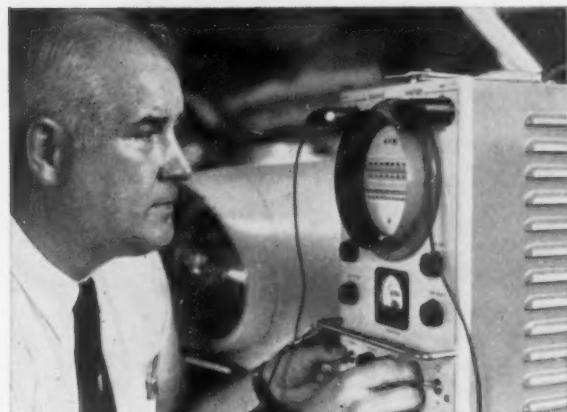
P.S. So far, this year, 88 NASCAR races have been run. 85 of them were won by Champion-equipped cars. Winning makes using Champions were Chevrolet, Ford, Dodge, Chrysler, Mercury, Oldsmobile, Buick and Corvette—further proof that *every* car does its best with Champions.



Dale, checking distributor cap with Snyder's son Carl, explains that often wires are not put far enough into cap when replaced, causing arcing and burn-out of cap.



Problem solved, Dale watches as Snyder's mechanic, Frank Onisko, installs new set of Champions in Chrysler Imperial. Snyder recommends Champions for all cars.



Here Dale checks engine with an oscilloscope. This engine analyzer supplements conventional tune-up instruments—assures peak engine adjustment.



Some of the many Champion tools and instruments that all Champion service representatives carry in their station wagons, for quick, on-the-spot service.



From the Champion research laboratories, latest information affecting engine and spark plug performance is continually passed to Champion field representatives.

Dependable 5-Rib

CHAMPION

SPARK PLUGS

A detailed illustration of a Champion 5-Rib spark plug. It features a white ceramic insulator with five raised ribs and a metal electrode. The word "CHAMPION" is printed vertically on the insulator near the top.

CHAMPION SPARK PLUG COMPANY • TOLEDO 1, OHIO



ADVERTISED TO YOUR CUSTOMERS IN THE SATURDAY EVENING POST

Your N·A·P·A Jobber has the finest and most comprehensive group of automotive replacement parts and supplies ever assembled under one banner, and available to you from a single, friendly and cooperative source of supply.

As part of the nation's largest independent automotive parts organization, with 44 warehouses throughout the country, he has the advantage of *complete* master stocks of all these lines within overnight shipping distance, or less.

Within the next few weeks, your N·A·P·A Jobber will join with thousands of others in the nation-wide

"Parade of Parts" to dramatize the service and selling advantages which you and other repairmen receive *only* through the N·A·P·A Jobber. Visit your N·A·P·A Jobber on this occasion, and learn first-hand how he can save you time and *needless expense* when you concentrate your buying with him. At the same time, get better acquainted with the wide range of nationally advertised parts and supplies he carries for your convenience.

Finally, buy the October 6th issue of The Saturday Evening Post. Keep it in your shop, and refer your customers to the 4-page N·A·P·A advertisement to show them that genuine quality characterizes the parts you use in their cars and trucks.

Your N·A·P·A Jobber is a Good Man to KNOW!

National Automotive Parts Association, Detroit, in behalf of the thousands of independent

N·A·P·A JOBBERS

who supply the automotive repair trade from coast-to-coast with these—and many other—nationally advertised brands of quality automotive parts and supplies.

RIVETED or BONDED



*American
Brakeblok*

For Top Quality... and Profit

Riveted or bonded, American Brakeblok brake linings are first in quality, easy to install, and profitable to stock. That's why so many brake servicemen use American Brakeblok exclusively. American Brakeblok linings are available in bonded or riveted for all cars and light trucks, and in heavy-duty linings and thick blocks for trucks and buses.

AMERICAN BRAKEBLOK DIVISION • DETROIT 9, MICHIGAN



Fleet Bumper Lifts

Whether you prefer a hydraulic or mechanical one-end bumper lift for fast service, it is available in the FLEET line of jacks. In addition to these popular service models, you can get 36 other sizes and types of FLEET hydraulic or mechanical jacks for every lifting requirement from your N.A.P.A. Jobber.

EDGEWATER AUTOMOTIVE DIVISION • ST. JOSEPH, MICH.

"Parade of Parts"-the greatest in the industry

NAPA "PARADE OF PARTS" (continues) →

ECHLIN
EXTRA QUALITY
AT NO EXTRA COST
TO YOU!



Good Ignition...

Your customers will get better performance, and appreciate it, if you check Ignition Contacts and Condenser every 5,000 miles; other Ignition Parts, Generator and Starter systems every 10,000 miles. This is profitable preventive maintenance.

ECHLIN MANUFACTURING COMPANY • NEW HAVEN, CONNECTICUT

TRICO
D-107
Displaymobile

*Stocks 'em better
Sells 'em faster*

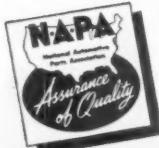
- ✓ Requires only 18" x 18" of floor space
- ✓ Completely portable
- ✓ For indoor or outdoor use

Put the Spotlight on SAFETY SERVICE

This new portable Displaymobile turns your Trico Stock Organizer Cabinet and Vis-U-Lid into a movable Wiper-Washer service department. It's a step-saver, a sales-maker... puts your merchandise where the car owner will see it. Use on service floor, lubricitorium, or roll out to island near gas pump. Available free of charge with a small stock of arms or blades.

TRICO PRODUCTS CORPORATION • BUFFALO 3, NEW YORK





N·A·P·A

"Parade"



Job-Proved TALENT Tools

Precision-built Talent Tools are the result of over 30 years of electric tool experience. Each model is power-packed, compact and easy-to-handle. Disc Sanders, Polishers, Valve Seat Grinders, Valve Refacers and a complete range of Drills from $\frac{1}{4}$ " to 1" capacities . . . all built to meet the most exacting demands of automotive mechanics and service shops.

SKIL CORPORATION • CHICAGO 30, ILLINOIS



Dittmer Transmission Gears

Since 1919 Dittmer Transmission Gears have kept automobiles and trucks operating all over the world. DITTMER products are recognized everywhere as top quality. They are truly "Second to None" in mathematical accuracy, metallurgical treatment and appearance.

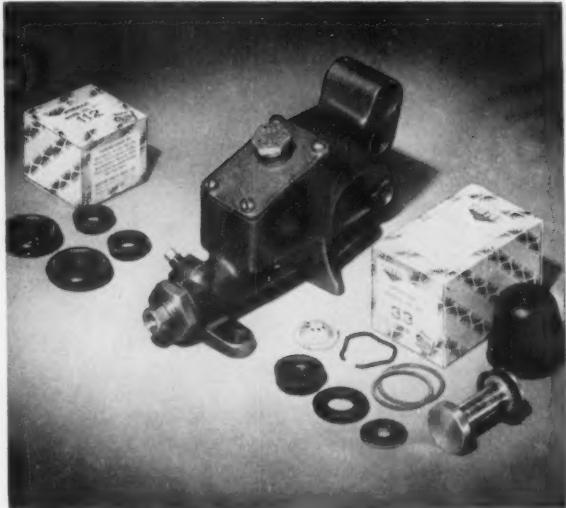
DITTMER GEAR & MFG. CORP. • LOCKPORT, NEW YORK



Thomson Thermostats—the complete line

To all cooling systems, Thomson Thermostats bring the advantages of the tight-sealing, trouble-free poppet valve. For pressurized systems, the revolutionary "HP" Stat with the exclusive reverse-action valve. . . . For other systems, the Thomson Electrofused bellows-type. Both widely used by vehicle makers—meet or surpass original equipment standards.

STANDARD-TOMSON CORPORATION • VANDALIA, OHIO



UNITED means dependability

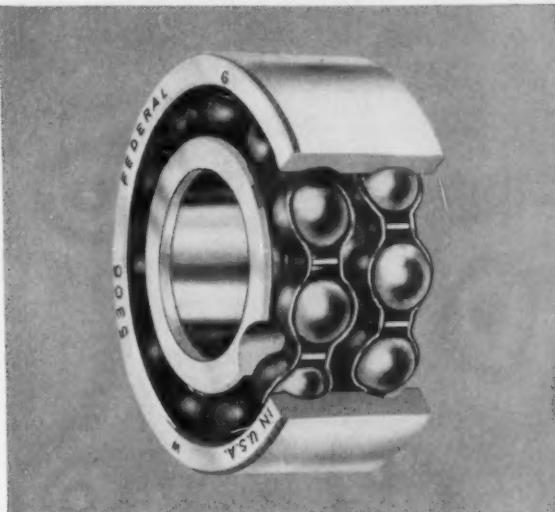
UNITED Hydraulic Brake Parts are replacement engineered and specifically designed to completely restore the hydraulic brake system to peak operating efficiency. Automotive servicemen the world over have dependably applied UNITED brake parts for over a quarter century. Use UNITED. Your N·A·P·A jobber features this brand.

UNITED PARTS MFG. CO. • CHICAGO, ILLINOIS

← NAPA "PARADE OF PARTS" (continues)

"Parade of Parts"

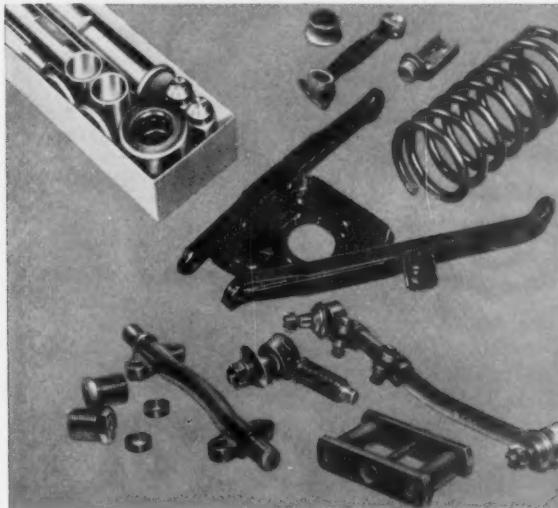
nationally advertised brands for CARS, TRUCKS, TRACTORS • ALL MAKES • ALL AGES!



Federal Ball Bearings

Most complete ball bearing line for the automotive industry. Used as *original equipment* on millions of vehicles by leading manufacturers. Chosen by repairmen as the ideal replacement bearing. *Federal Ball Bearings* are dependable—backed by the dependable source of supply—your N·A·P·A Jobber!

THE FEDERAL BEARINGS CO., INC. • POUGHKEEPSIE, NEW YORK



Allied-Monmouth Chassis Parts

In Allied-Monmouth Chassis Parts, N·A·P·A Jobbers offer a complete line engineered and built to original equipment standards in materials and tolerances. Includes Wheel Suspension Parts, Coil Springs, Steering Parts, King Bolt Sets, Shackles, and Ball-Joint Suspension replacements. Make your N·A·P·A Jobber your headquarters for Chassis Parts.

ALLIED MOTOR PARTS COMPANY • DETROIT, MICHIGAN



Fast Turnover with Standard Seal Stocks

Standard Grease Seal Service Stocks make it easy, profitable to follow car manufacturers' recommendations—install new seals every time old seals are removed. No. 6 Stock: over 100 wheel seals for late model cars, light trucks. No. 7 Stock: over 50 front wheel auto seals. All fast movers. Free metal cabinet, stock check card with application, price data.

STANDARD SEAL COMPANY • VAN WERT, OHIO



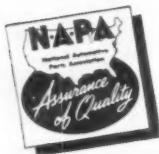
DETROIT UNIVERSAL JOINTS

For Bigger Service Profits . . .

Be sure to use genuine Detroit repair parts. Detroit service parts are identical to those supplied to vehicle manufacturers for original equipment. Your assurance of quality, fit and performance. Genuine Detroit Repair Kits and Drive Shafts are available from your local NAPA Jobber.

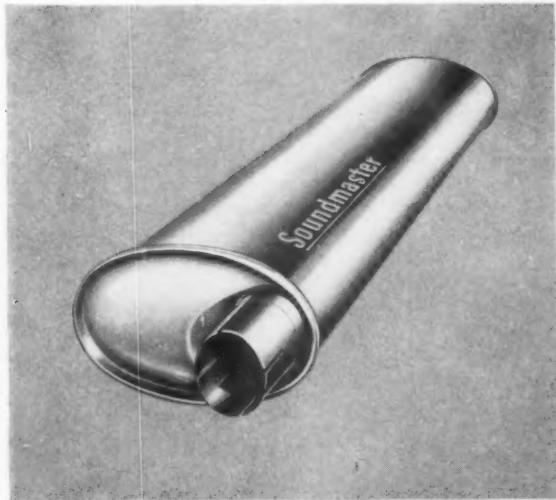
DETROIT UNIVERSAL DIVISION • DEARBORN, MICHIGAN

NAPA "PARADE OF PARTS" (continues) →



N·A·P·A

"Parade"



It's Powerful Quiet with a Soundmaster

POWERFUL because each muffler is designed to meet the special needs of a specific engine, to preserve all its flashing performance . . . **QUIET** because each noise condition is met individually, with laboratory tests to determine the one best construction to produce Quiet . . . **SAFE** because Soundmaster mechanical fit protects car owners against deadly "CO"!

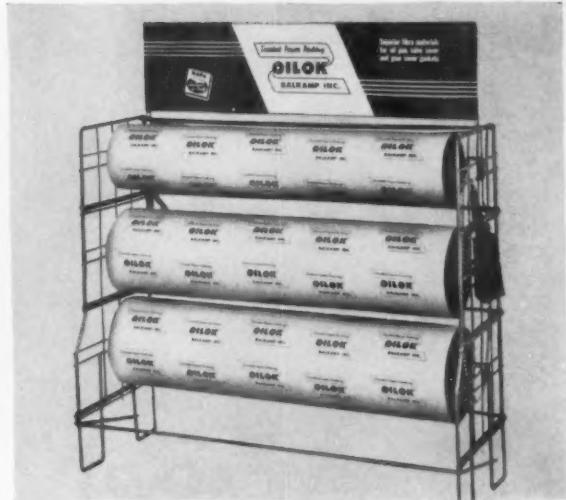
DE KOVEN MANUFACTURING COMPANY • RACINE, WISCONSIN



For Wire Profits—Without Complaints

Use Belden—the Wiring Line that's complete for all service jobs—easy to stock—at a surprisingly low investment. Easier application means faster replacements. Belden Wire and Cables are engineered for modern cars, trucks, and buses—the line most servicemen use. Ask your Jobber Salesman.

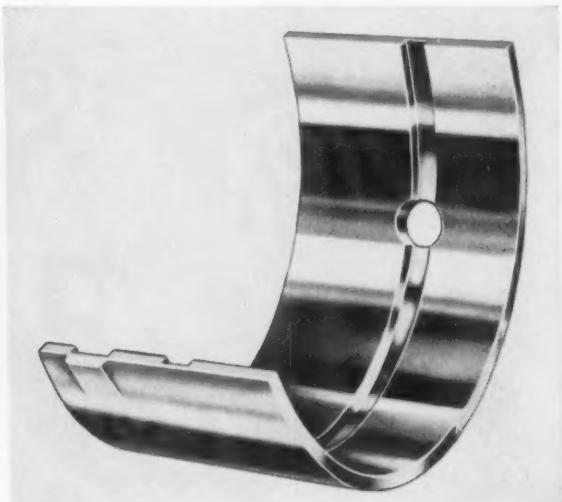
BELDEN MANUFACTURING COMPANY • CHICAGO, ILLINOIS



OILOK Treated Paper Packing

OILOK is a treated fiber sheet packing, impervious to water, gasoline and oil. Available in 18" and 36" width rolls. Supplied in $\frac{1}{16}$ ", $\frac{1}{8}$ ", and $\frac{1}{4}$ " thicknesses. Its compressibility and sealing qualities adapt OILOK for oil pan, gear cover, and valve cover installation when ready-cut gaskets are not available.

MANUFACTURED BY VICTOR MFG. & GASKET COMPANY
FOR BALKAMP, INC. • INDIANAPOLIS



Monmouth Engine Bearings

MICRO AND CLEVITE 77

Designed Right—by the engineers who design most original equipment.

Made Right—by the world's largest bearing manufacturer.

Sold Right—N·A·P·A service.

CLEVITE SERVICE DIVISION • CLEVELAND, OHIO

NAPA "PARADE OF PARTS" (continues)

of Parts"

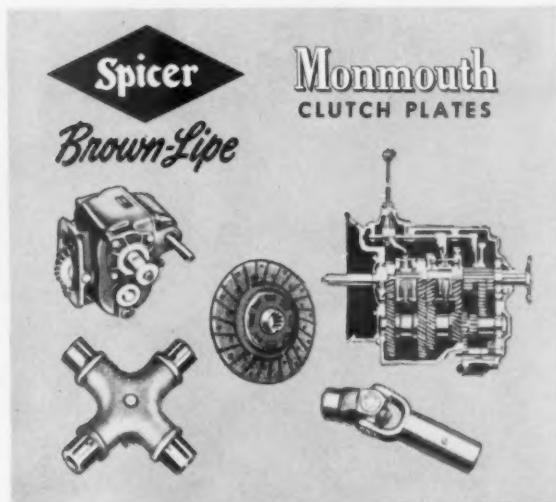
nationally advertised brands for CARS, TRUCKS, TRACTORS • ALL MAKES • ALL AGES!



Automotive Finishes

Martin-Senour's highest-quality finishes—in the industry's widest range of colors—help assure complete customer satisfaction! Best color match, best blend-in, best gloss. Factory-packaged or custom-mixed colors, thinners, reducers—everything you need to do the whole job! Use Martin-Senour products exclusively!

MARTIN SENOUR, 2500 SOUTH SENOUR AVE • CHICAGO 8, ILLINOIS



Dana Products

Just as practically all vehicle makers depend on DANA-made Products, you can depend on Spicer and "Mechanics-Type" Universal Joint Kits; Spicer Transmissions; Spicer Power Take-Offs and Joints, and Monmouth Clutch Plates.

DANA CORPORATION • TOLEDO 1, OHIO



B-K Prepo Torches

A portable, light-weight and versatile torch adapted to a wide variety of uses in shop or home. Equipped with Utility Burner for general purpose work; Heavy-Duty Burner for big jobs, and Pin Point Burner for precision soldering; plus Diamond Point and Chisel Point Solder Tips, and Paint Remover Tip. Packed in all-metal fitted case, complete with fuel.

B-K SERVICE PRODUCTS • INDIANAPOLIS, INDIANA

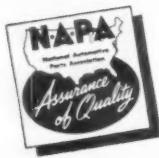


Briggs "Hydro-Muscle"® Ride Control

Car owners don't understand "shock absorbers." What they want and will buy is *Ride Control*—Briggs "Hydro-Muscle" Ride Control. A year-round safety necessity. Ask your jobber for the high-profit, fast-action assortment of 12 Briggs "Hydro-Muscles"—potent Muscle Man selling tools included FREE to tie in with big-space national ads.

THE BRIGGS SHOCK ABSORBER COMPANY • CLEVELAND, OHIO

NAPA "PARADE OF PARTS" (continues) →



N·A·P·A "Parade"



Puritan Brake Fluid

Protect your customers—Protect your profits. Only the best brake fluid is good enough for your customers and you can afford to handle and sell only the best—Puritan Super 60. It's the top quality, top performance heavy duty brake fluid that meets and exceeds SAE Specification 70R1 by a wide range!

OLIN MATHIESON CHEMICAL CORPORATION • BALTIMORE 3, MD.



Famous Hand Tools

The complete Line of top-quality, professional Tools designed for mechanics by mechanics—including the great new Automatic Transmission Tools that open up this money-making service field for you. Ask for New Britain Tools. They're engineered to handle today's repairs and service—faster for you!

THE NEW BRITAIN MACHINE CO. • NEW BRITAIN, CONNECTICUT



ECHLIN Ignition

VISUMATIC • Visual stock control • Room for expansion • Perpetually balanced stock • Annual modernization • Guaranteed against obsolescence • The part you want when you want it—

ECHLIN MANUFACTURING COMPANY • NEW HAVEN, CONNECTICUT



Visall Safety Products

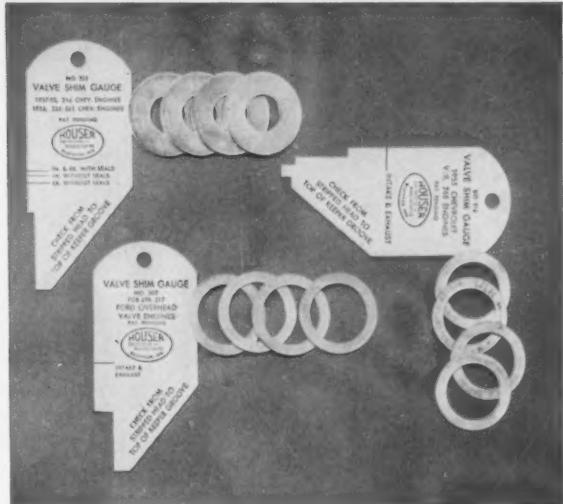
Quality material . . . skilled engineering . . . know-how manufacturing. Turn signals, Turn Signal Switches. Clearance Marker, Fog and Driving, Backup, Utility, Emergency, Stop and Tail and Stop Lights. Passenger Car Mirrors. Truck Mirror Arms and Heads. Reflectors, Liquid and Reflector Flares. Safety Equipment for all Vehicles.

VEHICLE PRODUCTS COMPANY • CINCINNATI, OHIO

← NAPA "PARADE OF PARTS" (continues)

of Parts"

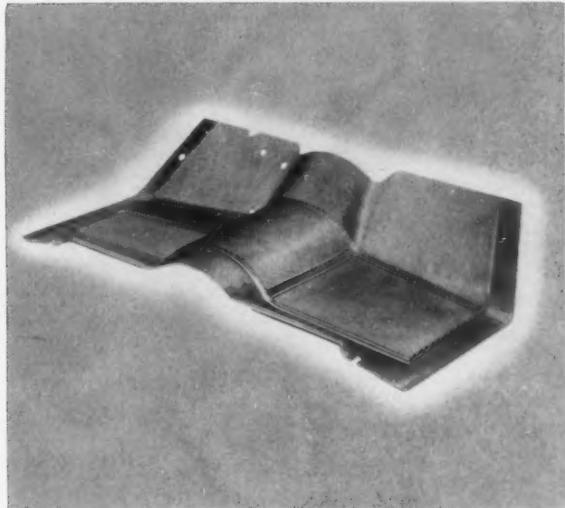
nationally advertised brands for CARS, TRUCKS, TRACTORS • ALL MAKES • ALL AGES!



Balkamp Valve Spring Shims and Gauges

The quick, economical way to restore original valve-spring tension lost through normal wear on keeper, keeper-groove, valve-face and seat, or as the result of grinding operations. The Balkamp Valve Shim Gauge shows you the wear to be compensated for. Balkamp Shims do the job. For Chevrolet, Ford and Mercury overhead valve engines.

BALKAMP, INC. • INDIANAPOLIS, INDIANA



Prospect Contoured Floor Mats

Prospect Floor Mats fit better and wear longer because the exact shape of the car floor is permanently built into the mat, and because they are engineered and constructed of the same quality materials supplied to car manufacturers. They are easier to install because holes for pedals, accelerator, etc., are accurately pre-punched, for old cars and new.

PROSPECT RUBBER CO. • CLEVELAND, OHIO



Duckworth Timing Chains

Often a "ring" job isn't the complete answer to motor "pep" . . . the kind your customer expects. Check the timing chain for wear and stretch. If replacement is needed recommend Duckworth (R) Monoflex Timing Chains for top motor performance, with gas and oil savings as an extra bonus. Result: "repeat" business that comes from real customer satisfaction.

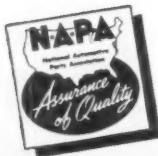
CHAIN BELT COMPANY • SPRINGFIELD, MASSACHUSETTS



Allied Motor Parts

When new engine parts are needed, look to Allied and your N.A.P.A. Jobber for the finest of parts, the fastest service and the most comprehensive coverage. The plants which produce Allied Motor Parts are all specialists in their fields, with engineering "know-how," production facilities and manufacturing capacity unsurpassed in the industry.

ALLIED MOTOR PARTS COMPANY • DETROIT, MICHIGAN



N·A·P·A

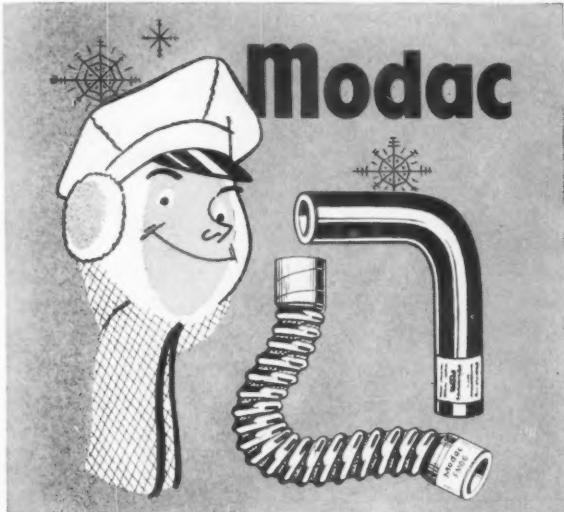
"Parade"



B★K Automotive Brushes

A complete line of brushes for every automotive use, with quality assured by the N·A·P·A Seal—all available from one convenient source, your N·A·P·A Jobber. Fountain Brushes; Revolving Brushes; Wheel and Fender Brushes; Grill and Spoke Brushes; Engine and Parts Brushes; Tire Brushes; Whisk Brooms and Floor Brushes. See your N·A·P·A Jobber.

B★K SERVICE PRODUCTS • INDIANAPOLIS, INDIANA



Modac Quality Radiator Hose

To make sure of contented customers, check the radiator hose when you add anti-freeze. If the hose is cracked, mushy or swollen, replace it with MODAC Easy-Flex Curved Hose. Designed to fit every car, MODAC gives faultless, sturdy service—is quickly and profitably installed. For the finest radiator hose, ask your N·A·P·A Jobber for MODAC!

HAYWOOD INDUSTRIES • WAYNESVILLE, NORTH CAROLINA



Soundmaster Exhaust and Tail Pipes

For safety's sake, always check the exhaust and tail pipes when you check the muffler. Leaks, rust, fractures and loose connections can expose customers to the dangers of deadly "C.O.," just as much as a rusted-out muffler. For prompt, complete service, see your N·A·P·A Jobber for Soundmaster exhaust and tail pipes—engineered to fit, built to endure.

DE KOVEN MANUFACTURING COMPANY • RACINE, WISCONSIN



Balkamp Switches

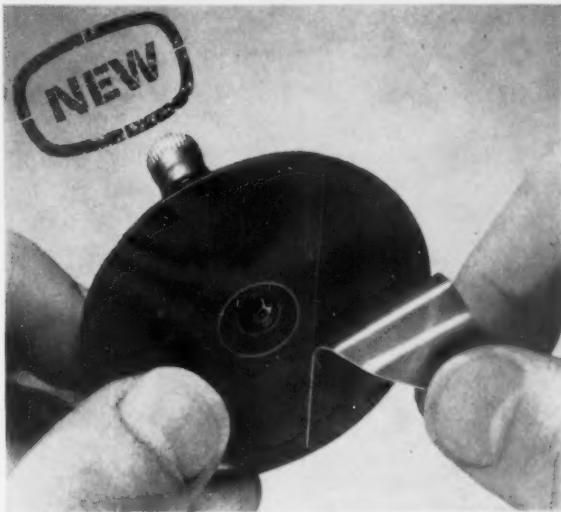
Switches are like razor blades. You forget about 'em when you're not using them. That's why this Balkamp Plexiglass Display helps you sell so many switches. *People see them!* Shows 14 of the most popular switches of these types: Heater, Toggle, Ignition, Push-Pull, Door and Horn-Button. Ask for Balkamp No. 31A Switch Display Assortment.

BALKAMP, INC. • INDIANAPOLIS, INDIANA



of Parts"

nationally advertised brands for CARS, TRUCKS, TRACTORS • ALL MAKES • ALL AGES!



Bridgeport COLD-HOT Replacement Valves

Bridgeport "Cold-Hot" Replacement Valves can be applied either cold or hot for fast, sure replacements. Cost no more than ordinary valves. Another "first" from Bridgeport's complete line of tire valves and accessories. See your N.A.P.A. Jobber today.

BRIDGEPORT BRASS COMPANY • BRIDGEPORT 2, CONNECTICUT



DYTHOL Automotive Finish

Newest, most revolutionary automotive paint! Has all the advantages of both lacquer and enamel! Dries in only 30 minutes... assures quicker delivery of car when left for refinishing! In any of 26 beautiful colors, it leaves a brilliant, extra-hard, glossy finish that outlasts all other paints. Insist on Martin-Senour DYTHOL Automotive Finish.

MARTIN-SENOUR, 2500 S. SENOUR AVE. • CHICAGO, ILLINOIS



This brand on heavy-duty lining means
MORE STOPS PER DOLLAR

Insist on **American**
Brakeblok Heavy Duty Lining

AMERICAN BRAKEBLOK DIVISION • DETROIT 9, MICHIGAN

Other NAPA Lines

CELORON® Timing Gears and Chain Sprockets
Continental Fibre Division, Cleveland, Ohio

CLEVELAND Universal Joints
Cleveland Steel Products Corporation, Cleveland, Ohio

HAARTZ-MASON Friction Tape
Haartz-Mason, Inc., Watertown, Massachusetts

K. O. LEE Valve Seat Inserts
K. O. Lee Company, Aberdeen, South Dakota

**MICROTEST Automatic Transmission Parts
and Kits for All Cars**
MicroTest Gear Company, Indianapolis, Indiana

MICROTEST Axle Shafts
MicroTest Gear Company, Pottstown, Pennsylvania

MICROTEST Drive and Pinion Gears • Flywheel Gears
Balkamp, Inc., Indianapolis, Indiana

MODAC Auto Mats
Worcester Rubber Company, Worcester, Ohio

MODAC Service Hose and Splash Guards
B. F. Goodrich Company, Akron, Ohio

RARITAN Roller Bearings
Raritan Bearing Corporation, Trenton, New Jersey

ROCKFORD Fasteners, Screws, Bolts and Nuts
Rockford Screw Products Company, Rockford, Illinois

ZOLLNER Heavy-Duty Pistons
Zollner Machine Works, Fort Wayne, Indiana

Every time we service a car or truck, we

LOOK FOR A



POWER BRAKE SALE

—and we get our share of them!

Detroit Garage Operator Finds Leading Power Brake Gives Him Big Profit Volume Over Three-Year Period

After thirty years in business at the same location, John Panasuk of Seven-Mile Auto Electric in Detroit is well qualified to make some straightforward observations on the independent garage business. One product he is quick to praise is the Bendix* Power Brake. "It has been a real money-maker for us", he says. "There are almost fifty million vehicles on the road *without* power brakes. You just have to remember that all of them are definite prospects."

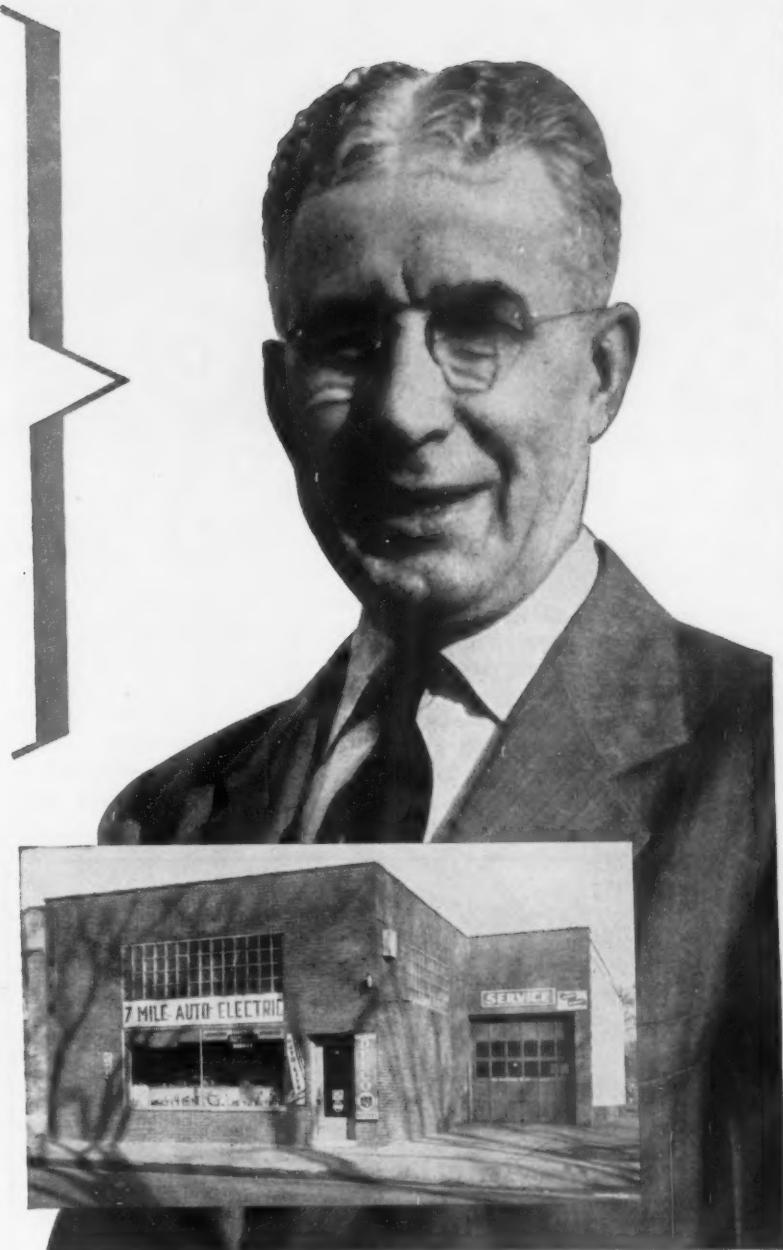
Mr. Panasuk's mechanics do remember that simple fact—and it pays off with an average gross profit of \$30 per unit. "Every time we service a car or truck, we look for a power brake sale", he says, "and we get our share of them. People are safety conscious these days, and power brakes are the leading safety accessory on the market. It doesn't take high-pressure tactics to sell them—just simple logic."

There's another factor, too, as Mr. Panasuk points out. "Sure", he says, "we're pleased with the profits we've enjoyed in three years of Bendix Power Brake sales, but more than that we like to think we may have saved a life or two. It's a good feeling."

Profitable power brake sales are there for the asking. But you *do* have to ask. Try it and see if the extra income doesn't come in handy.

*REG. U.S. PAT. OFF.





JOHN PANASUK SAYS: "THE SALES ARE THERE IF YOU LOOK FOR THEM"

There's
a Giant Market
just waiting for
you to tap it

40
MILLION CARS

7
MILLION TRUCKS

SPEEDY INSTALLATION

NO SPECIAL TOOLS

ANY MECHANIC
CAN INSTALL

BIG PROFITS, BIG VOLUME

How to get a
Power Brake
Demonstrator

Call your nearest Bendix Distributor for a special demonstrator unit. Specially priced for service stations, garages and car dealers.

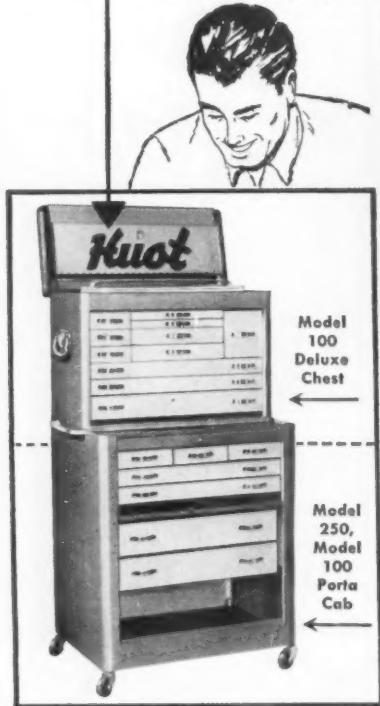
**BENDIX PRODUCTS
DIVISION SOUTH BEND, INDIANA**

Export Sales and Service: Bendix International Division, 205 E. 42nd St., N. Y. 17, N. Y.
Canadian Sales: Bendix-Eclipse of Canada, Ltd., Windsor, Ontario, Canada

STROMBERG® CARBURETORS—Cars, Trucks, Industrial • BENDIX VACUUM POWER—Power Brakes—Passenger Cars, Trucks, Trailers • HYDRAULIC CONTROLS—Power Steering—Passenger Cars, Trucks, Trailers, Buses, Industrial, Agricultural • BENDIX BRAKES—Factory-New Lined Shoes, Lining Segments, Repair Parts • BENDIX® METALCLENE—Metal Parts Cleaner • BENDIX® ECONOCLENE—Multi-Purpose Cleaner Concentrate.

Bendix
AVIATION CORPORATION

SIGN of a proud craftsman



Everywhere you look—you'll find quality Huot tool chests on the job. Automotive mechanics all over the country prefer Huot chests for sure protection of fine tools and to keep everyday tools handy.

The Model 100 deluxe chest has 11 free-sliding, non-spilling drawers—with 7 of them cork-lined for storing precision tools. 3 large drawers store bulky, heavy tools. A large drawer $4\frac{3}{4} \times 11 \times 6\frac{1}{4}$ easily handles any $\frac{1}{2}$ " electric drill. The portable tote tray on the top shelf is ideal for small tools. Baked on finish in two-tone blue and gray makes the chest grease and oil resistant. The chest locks completely with one twist of built-in lock.

3 drawers $1\frac{3}{4} \times 4\frac{3}{4} \times 11$
2 drawers $\frac{3}{4} \times 11 \times 11$
2 drawers $1\frac{3}{4} \times 11 \times 11$
1 drawer $6\frac{1}{4} \times 4\frac{3}{4} \times 11$
2 drawers $1\frac{3}{4} \times 23 \times 11$
1 drawer $2\frac{3}{4} \times 23 \times 11$

The Model 250 is a complete rolling workbench. It can also be used as a portable base for the Model 100 shown above. Ruggedly built of heavy formed and welded steel, it has a single built in lock to secure the Hyde-Way front panel.

Drawers are free sliding . . . lower drawers are equipped with oversized rails to handle extra weight . . . 3 drawers have movable dividers . . . 3 top drawers are cork lined. Cabinet available with "Flying Saucer" or 4 inch casters for mobility over rough floors. Drawer dimensions:

Huot
is pronounced
"HEW-OH"

See your jobber or write for bulletin

HUOT MANUFACTURING COMPANY
585 N. Wheeler Street, St. Paul 4, Minnesota



Continental Mark II for 1957 bows

The Continental Mark II will follow the European pattern of "design endurance" and will preserve its present styling features during the 1957 model year.

This is in keeping with the merchandising concept inherent in the original designation of the Continental as a Mark II, rather than

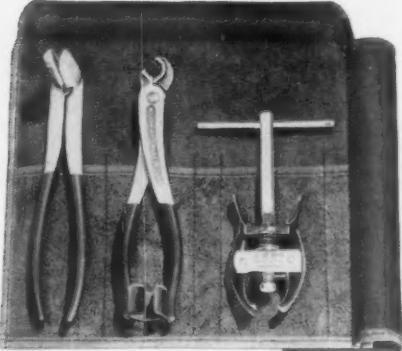
that of a particular model year, according to Ben D. Mills, vice president of Ford Motor Company and general manager of the Lincoln Division.

Added power, economy and acceleration are provided in the Continental Mark II for the 1957 model year as a result of the introduction of a new high-compression engine, an improved transmission and a

(Continued on page 178)

Mr. Mechanic—HERE'S THE ANSWER

TO FAST, EFFICIENT BATTERY SERVICE!



Three popular BLUE BIRD BATTERY TOOLS in handy durable leatherette case. TESTED . . . PROVEN . . . RECOMMENDED by America's Leading Battery Manufacturers.

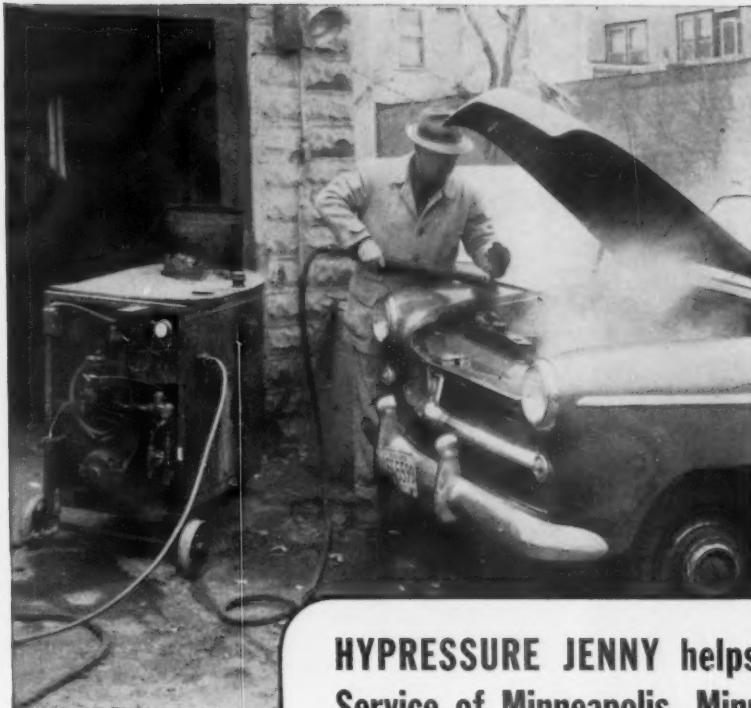


Bergman TOOL MFG. CO. INC.

1573-1575 NIAGARA ST., BUFFALO 13, N. Y.

Established 1899—Manufacturing Fine Quality Tools For Over 50 Years

See your jobber
or write.



New Series "1250" Jenny

HYPPRESSURE JENNY helps Evan's Auto Waxing Service of Minneapolis, Minnesota net over \$2000 a year from engine cleaning alone...



Mr. Burt Evans
Owner and Manager
Evans Auto Waxing Service

Mr. Evans, who specializes in appearance reconditioning of used cars for dealers, figures that half of his total volume comes from engine cleaning which he considers equally important with waxing in appearance reconditioning. Hyppressure JENNY makes it possible for him to handle nine cars an hour compared with only one car every forty-five minutes by a former cleaning process.

With an estimated net profit of \$40 a week from engine cleaning alone, Mr. Evans says, "I consider JENNY very satisfactory. I couldn't get along without it."

This is impressive testimony to the profit-making possibilities of Hyppressure JENNY, not to mention the time and labor saving involved.

If you'd like us to send you full particulars on how Hyppressure JENNY Steam Cleaner can be put to work earning *more profits* for you ...

MAIL THE COUPON TODAY!

There is no obligation

HYPPRESSURE

Jenny

**STEAM
CLEANER**

Mail this
coupon TODAY...

Please send full information on

Hyppressure Jenny

Jobber Time Payment Plan

Name _____

Title _____

Company _____

Address _____

City _____

State _____

**HYPPRESSURE JENNY DIVISION
HOMESTEAD VALVE MANUFACTURING COMPANY**

P.O. BOX 95

"Serving Since 1892"

CORAOPOLIS, PA.

**EVERY 7th CAR
NEEDS A
NEW MUFFLER**

**MAKE
IT A
HAVILAND
MUFFLER
FOR CUSTOMER
SATISFACTION**

**QUALITY
TESTED
AND
ACCEPTED**

Write Dept. 11

Arnold Haviland Company, Defiance, Ohio

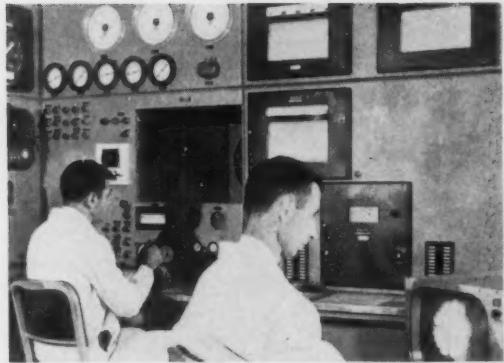
**The PIONEER Tool
FOR INSTALLING VALVE SEAT RINGS**

**The Biggest
Seller**



THE FIRST . . . and still the MOST POPULAR, MOST PRACTICAL, SIMPLEST, MOST UNIVERSAL tool of its kind made. EVERLASTING . . . the first tools made over 25 years ago are still in service.

**K. O. LEE COMPANY
ABERDEEN, SOUTH DAKOTA**



Example of TV use in the Ford Lab is illustrated in above view of control panel for monitoring pressures, temperatures and flows during burner tests.

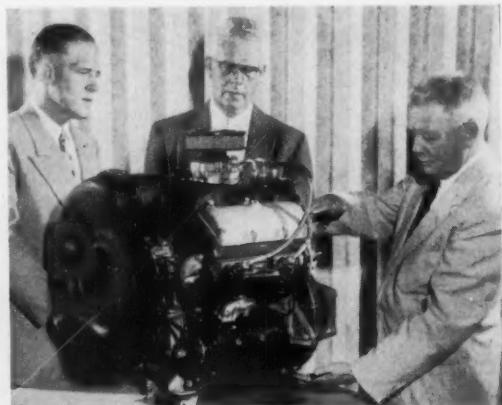
Closed Circuit Television

Closed-circuit TV is permitting observations of the performance of engine components at the Ford Motor Company's Pilot Gas Turbine Laboratory, Dearborn, Mich.

This was reported recently by Dage Television Division, Thompson Products, Inc., Michigan City, Ind., manufacturer of closed-circuit TV equipment used in the laboratory.

According to F. G. Oblinger Supervisor of the Gas Turbine Department's Test Section, "the system has been used in a variety of applications which required observation of the performance of engine components located in hazardous areas."

Oblinger explained that closed-circuit TV is specifically applied to remote observation of three different activities: 1. Flame patterns in combustion chambers. 2. The operation of critical engine linkages. 3. The characteristics of engine lubrication.

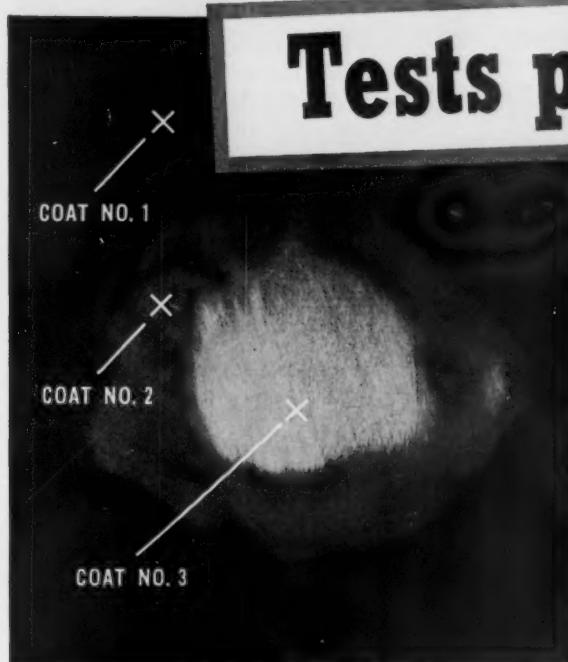


AMERICAN MOTORS has announced development of a radically new V-4 air-cooled engine which is adaptable for use in airborne military vehicles, small private passenger cars or for commercial use. Pictured with the model, now undergoing severe 500-hour endurance tests, are (left to right) George Romney, AMC president; Stuart G. Baitz, vice-president and general manager of the company's Special Products Division, and Meade F. Moore, vice-president in charge of automotive research and engineering.

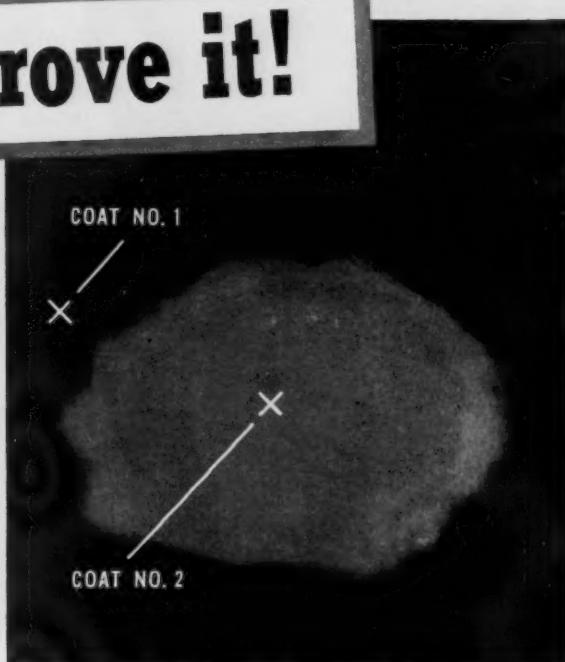
World's fastest-cutting sandpaper... "WETORDRY"

REG. U. S. PAT. OFF.

Tests prove it!



"WETORDRY" Tri-M-ite Paper, Grit 320A, cut through first color coat in 40 strokes—through second coat in 45 more, cut aggressively for 200 strokes before noticeably dulling.



WATERPROOF sandpaper "X", Grit 320A, took 60 strokes to cut through first color coat—quit cutting 18 strokes later, never reached third coat.

No matter how it's used



In the test shown above, two identical test panels were sanded—one with "WETORDRY" Tri-M-ite Paper, the other with waterproof sandpaper "X." Results were conclusive: "WETORDRY" cut aggressively 122 strokes longer than the other sandpaper *and* cut 30% faster!

Wet sanding with 3M's "WETORDRY" is fast and easy—"WETORDRY" becomes pliable when wet, has a chamois-like feel that makes it conform better. The diamond-hard silicon carbide particles cut quick and stay sharp

long after ordinary sandpapers have worn out.

No matter how you use it . . . hand sanding, block or pad sanding, machine sanding, disc sanding . . . "WETORDRY" Tri-M-ite Paper is designed to save you time, money and work on every job—spot and over-all. Order today from your regular 3M supplier. Remember, it's the world's fastest-cutting, sharpest sandpaper.



3M Automotive Products



The term "Wetordry" and the plaid design are registered trademarks of Minnesota Mining and Manufacturing Company, St. Paul 6, Minnesota. Export Sales Office: 99 Park Avenue, New York 16, N.Y. In Canada: P.O. Box 757, London, Ontario.



Continental Mark II . Continued from page 174

high air flow carburetor.

The increase to a compression ratio of 10 to 1 has been made possible through the use of newly-designed chambers and a reshaping of the pistons. Displacement of the engine remains at 368 cubic inches, and the bore and stroke are 4.0 and 3.66 inches respectively.

Transmission Changes

Transmission changes involve the use of a steel converter with a smaller diameter than the aluminum converter previously used.

Other additions to the car include a new locking differential, automatic headlamp dimmer and 40-ampere generator, while important refinements have been made in the frame, brakes and power steering.

A reduction in the weight of the car from 4825 to 4797 pounds, due largely to frame weight reduction, has been achieved without sacrificing the exceptional torsional rig-

idity and smoothness of ride gained from the frame as it was originally designed by Continental engineers. Transfer of this rigidity to the body is aided by the use of steel in place of rubber shims in some areas.

As a result of the use of modified power steering control springs, less effort is required in steering, both in parking and on the highway, report Continental engineers. These springs eliminate "wheel fight" from rotational shock by preventing the steering wheel from turning in the driver's grasp when the car is traveling over a bumpy surface.

Located on top of the instrument panel and to the left of the instrument cluster, the headlamp dimmer automatically lowers the headlights of the car when another vehicle approaches. "Far," "Normal" and "Near" settings enable the driver to adjust the device for distance.

The locking differential checks wheel spinning and sudden shock loads over uneven roads and under adverse driving conditions when one wheel leaves the surface of the road.

An additional safeguard against battery failure at low and idling speeds, and increased assurance of adequate amperage for the many electrical circuits found in the Continental Mark II, is provided by the substantial new 40-ampere generator.

In keeping with Ford Motor Company's car safety program, door locks, seat belts, shatter-proof mirrors, and padded instrument panels and sun visors are available. The instrument panel and inside mirror frame are padded with vinyl foam, while the nylon seat belts are bolted to both the body and the chassis.

New to the Continental Mark II instrument panel is a self-regulating electric clock, which automatically corrects itself by adjusting its rate of speed when the hands are set.

Reports prove that you can **INCREASE BUSINESS 18% to 45%**

...with **BIG 4's TIRE MERCHANTISER**

The Tire Merchantiser holds all of the equipment you need for a complete tire servicing department in compact one, two or three units. A five by fifteen foot canopy gives you a sheltered working area as well as working for you constantly as advertising space . . . just as the entire unit works for you as an ever prominent silent salesman.

When closed or open, advertising space is always in view. The units can be open for business, or closed and locked . . . in 60 seconds.



Increased profits, satisfied customers — both yours with Big Four's Henderson Tire Changer-Balancer with the new patented "Safety Lift" Demounting Tool — designed to apply double action — beads gently LIFTED and ROLLED off — safely, quickly, easily and efficiently.

The Balancer is also quickly and easily operated and far more accurate than most other balancers.

mail today:

BIG FOUR Industries Inc.
5938 Carthage Ct., Cincinnati 12, Ohio
I would like to see your mobile display

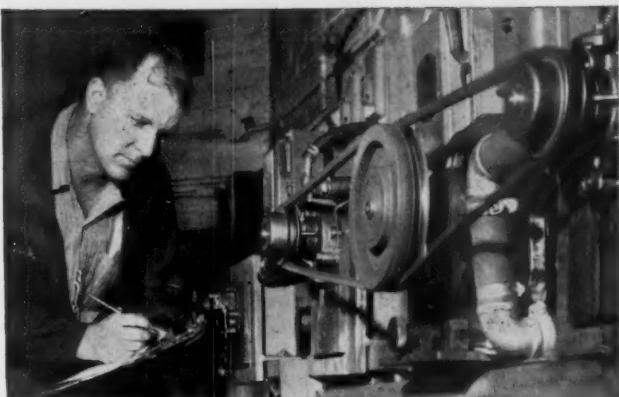
Name _____
Address _____

WRITE TO BIG FOUR FOR SPECIAL BULLETIN
ON THE NEW 14-INCH WHEEL

BIG 4

OVERSEAS DIVISION 276 W. 43rd St., New York 36, New York
CANADIAN DIVISION Canada Vulcanizer & Equipment Co. Ltd.,
London, Ontario
WEST COAST WAREHOUSE,
R. O. Richardson Associates, 2111 Long Beach Ave., Los Angeles, Cal.





Water Pump "Torture Test"—these machines test Toledo Steel water pumps under conditions more rigorous than the toughest actual engine usage. Pulleys, seals, and other internal parts are thoroughly checked for endurance and operating efficiency.

100% Test Against Leakage—every Toledo Steel water pump is subjected to this vacuum test which detects even the most minute leaks.



*Every **TOLEDO STEEL WATER PUMP** is vacuum-tested for perfect performance*

CUSTOMER satisfaction is guaranteed when you install factory duplicate Toledo Steel water pumps. Only the highest quality materials are used to assure long, trouble-free service. And *every* Toledo Steel water pump is tested to protect against leakage of water

or costly anti-freeze solutions.

See your Toledo Steel Distributor for complete water pump coverage for all passenger car makes and models. He has water pumps for trucks and farm tractors, too. Ask him for complete details, including profit possibilities.



TOLEDO STEEL PRODUCTS



6402 CEDAR AVENUE • CLEVELAND 3, OHIO

Division of Thompson Products, Inc.



NEW, IMPROVED 3-in-1 WEIGHT PLIERS!

Get this handy combination tool for easier, faster wheel balancing. Really does the job... jaw points inserted between clip and rim snap off weights in a jiffy. Especially handy for On-A-Car Balancers—balancer head will not interfere with weight removal. Order from your Jobber or write us for catalog data.



No More "Problem Wheels" when balancing off the car!

Complete line of NEW RADI CONES!

Precision-machined for true center fit! New set takes care of all car wheels, including 56's! Specially designed for use with Bear 36 and 330 Balancer. Order from your Jobber or write for data: Bear Mfg. Co., Dept. M-1, Rock Island, Ill.

1939

LOOK TO BEAR for Everything in Safety Service: Wheel Alignment Machines, including Telaliner and Drive-Over Tester; Wheel Balancers, Dy-Namic and On-A-Car types; Crankshaft Balancers; Brake and Headlight Testers; Frame, Axle and Wheel Straighteners; Balancru and other Tire Truing Machines. Also, Balance Weights, Caster Shims, Coil Spring Spacers and Stabilizers.

IMPROVE YOUR SERVICE WITH...

4X Silicone COMPOUND



STOPS SQUEAKS, STICKING OF WEATHER-STRIPPING

Lubricates—protects—prolongs life. Also ideal preservative for undercarriage rubber mountings, fan belts.

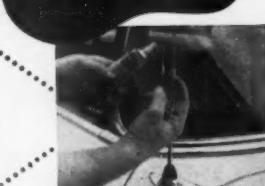


KEEPS BATTERY TERMINALS AND CASES CLEAN

Minimizes corrosion build-up—prevents electrical losses, prolongs battery life.

ORDER 4X COMPOUND FROM YOUR JOBBER TODAY. IT MEANS BETTER SERVICE—SATISFIED CUSTOMERS!

first in silicones



LUBRICATES, SELLS RADIO ANTENNAE
Improves reception. Makes antenna easier to operate. Excellent lubricant for window channels, too.



PROTECTS IGNITION SYSTEMS

Keeps moisture out—eliminates electrical leakage—preserves wiring.

DOW CORNING
SILICONES

DOW CORNING CORPORATION
MIDLAND, MICHIGAN

Safety-Checks

Continued from page 48

Carolina; and Trumbull County, Ohio.

In announcing results of the Safety-Check on behalf of the national sponsors, A. vander Zee, of the Chrysler Corporation and Chairman of the Inter-Industry Highway Safety Committee, said, "During the months of May and June community Safety-Check Lanes were in operation in 800 city and 95 county programs in 34 states.

Voluntary Citizen Support

"This is a new record for voluntary citizen support since the inception of community-wide programs in 1954. The combined efforts of public officials, safety, civic and business groups, and dealers of the automotive and allied industries are representative of the type of organized community action recommended by the President's Committee for Traffic Safety.

"With only thirteen states and the District of Columbia presently requiring motor vehicle inspection by law, it is particularly significant that more citizens in non-inspection states than ever before assumed individual responsibility for traffic safety by having their vehicles safety-checked," Mr. vanderZee added.

Condition of Vehicles Itemized

Items of vehicles safety-checked by type and the percentage of each to the total number of parts in need of maintenance attention are shown in the following table:

ITEMS CHECKED	Cars	Trucks	Total
Rear Lights	113,131	26.6	10,271 26.6
Brakes	74,760	17.6	6,207 16.1
Front Lights	68,979	16.2	5,602 14.5
Exhaust System	44,268	10.4	3,296 8.5
Tires	35,998	8.5	2,218 5.7
Steering	28,602	6.7	2,909 7.5
Windshield Wipers	21,729	5.1	2,288 5.9
Glass	20,197	4.8	2,794 7.2
Horn	12,167	2.9	1,662 4.3
Rear-view Mirror	4,851	1.2	1,433 3.7
<hr/>		<hr/>	<hr/>
	424,782	100%	38,680 100%

	Cars	Trucks	Total Vehicles
Total Checked	1,640,608	73,716	1,919,661
Total Needing Repair	320,467	23,334	361,423
Percentage	19.5	31.7	19

(Total vehicles checked: 2,185,524. Of this total, 1,919,661 vehicles were checked in community Safety-Check programs. Reports of 278,917 vehicles checked were not used in above tables due to insufficient data submitted.)

modern as tomorrow's
cars...



all-new service equipment from

ALEMITE

with beauty, power and efficiency that spells extra profit!



Lube can be piped
directly to overhead reels
or pits from remote installations

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For Complete Information—Today!

ALEMITE

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Products of STEWART-WARNER CORPORATION



PRODUCTS OF
SW
STEWART
WARNER

All-New Alemite Hose Reels

with exclusive new method of installation
—so easy, one man can do it!

- Distinctive new beauty! Customers know at a glance that your service is as modern as the cars they drive! Gleaming white enamel finish for easy cleaning, long life.
- Exclusive new design! Easy adjustment gives the exact reel tension you want—instantly! Reels are sectionalized. There's one for every service in your lube department!
- Exclusive new operating features! Smooth, steady tension. You can work reels with just half the effort! Fast latching feature stops reels at exactly your desired working length.

All-New Wall Alemite with built-in hoist

• Eye-Catching! Designed to modernize every lube department! Its custom-made look builds customer acceptance fast!

• Convenient! Simple finger-tip control automatically lifts entire shield and pumps for easy drum changing. Compact design leaves extra room around lifts. One air line serves three pumps and air hoist.

• Smooth-Performing! All the power you need for every type of lube service! "Super-H" Pump permits $\frac{1}{2}$ faster chassis lubrication . . . "H" Pump for gear lube, automatic transmission fluid, or motor oil.



W. F. MUNFORD

Portrait by Fabian Bachrach

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. . . is created daily by millions of Americans in their purchases of U.S. Savings Bonds through the Payroll Savings Plan. Better than three out of four of United States Steel's American Steel and Wire Division employees are taking advantage of this easy automatic plan of saving.

"We in management feel that every employee, whether newly hired or already on the payroll, must be advised constantly as to the values of this Savings Bond Pro-

gram. A program designed to maintain high employee participation is an integral part of our everyday operations."

**W. F. MUNFORD, President
American Steel and Wire Division
United States Steel Corporation**

Does *your* company present the advantages of The Payroll Savings Plan (and a Payroll Savings Application Blank) to every *new* employee? Are 75% of *your* employees enrolled in *your* Payroll Savings Plan?

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metal parts
the hard way?

USE **Bendix®**

**E-con-o
clene**

A new multipurpose cleaner concentrate. Mix with water, solvent or kerosene. Removes oil, grease, resins and tars. *Reg. U.S. Pat. Off.

**SPRAY
BRUSH
DIP**



Made by the makers of Metalclene

Bendix Products Division,
Bendix Aviation Corp.,
South Bend, Ind.

Clearing House . . .

Continued from page 63

hydraulic valve lifters in an Oldsmobile '88'. I have taken them apart and soaked them in solution. Then, I cleaned them thoroughly. In doing this, I was careful not to mix them because they are not interchangeable. However, after a few hundred miles, they do not operate.

Max Kluglein
Kluglein's Service
Smithboro, N. Y.

SINCE these lifters act up after only a few hundred miles, the trouble most likely comes from a dirty crankcase. I would suggest draining and flushing the crankcase and installing a new oil filter.

Engine Backfires and Ruins Air Cleaner

We have a 1950 Buick Special that has begun to backfire through the carburetor. Recently it caught fire and it also has blown out the air cleaner. We have checked and cleaned the carburetor and rebuilt the distributor. The compression and wiring have also been checked.

George E. Kistler
G. E. Kistler Garage
Carlisle, Pa.

THIS problem is usually due to faulty ignition, carburetor or valves. I would suggest checking the distributor cap for cracks and for loose or frayed wires. The spark plugs should be tested and checked for proper heat range. There also is the possibility that you might have some water in the gasoline. The carburetor should be removed to check the float level, the accelerator pump and so on.

GIVES A FIRMER GRIP

COMPOUND
LEVERAGE
IS THE
SECRET

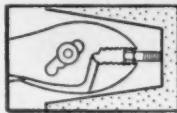


New

GRIPSO Multi-Duty 10-1 LEVERAGE PLIERS

Say goodbye forever to pliers that slip off work skinning knuckles and chewing corners off nuts and bolts. With Gripso Multi-Duty you can hold square, round or tapered objects securely with just a slight grip. Excellent in tight hard-to-reach spots — safe at any angle. Jaws open parallel in 4 positions. Serves as nut wrench and small pipe wrench as well as versatile leverage pliers. Forged of finest chrome-moly steel. Guaranteed.

Amazing compound leverage really pays off in hard-to-reach places and difficult angles.



Diagonal 4-position slots give closer easier jaw adjustments — eliminate wedge action and wear.



Powerful grip—cannot be pulled off tang of file—will not slip off cotter keys.

Other GRIPSO Specialty TOOLS

GRIPSO VISE PLIERS

Triggermatic
One-Ton-Grip releases smoothly with pull on trigger.



Fingertip Release

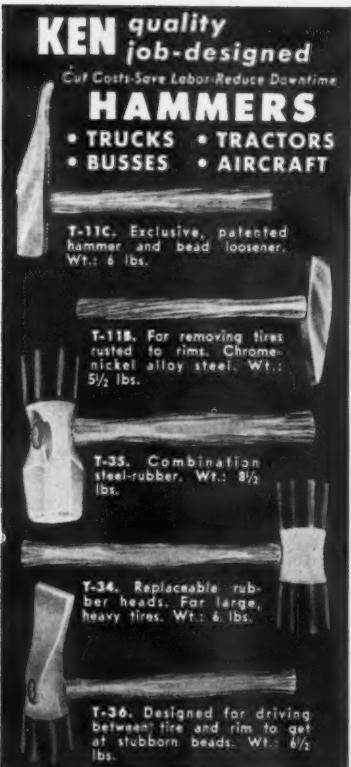
Adjusts, locks, releases all with one hand.



GRIPSOMATIC PIPE WRENCH

Lightweight, faster adjusting, streamlined, 14 and 10 inch.

See your dealer — or write
H. R. BASFORD CO.
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SAVE LABOR, TIME AND MONEY.
INSIST ON KEN TOOLS. Finest Quality
and Design. Largest Exclusive Mfgs. of
Tire Changing Tools and Equipment.

The KEN-TOOL Mfg. Co.
AKRON 5, OHIO

When Drain Plug
Threads are
Stripped — use

CHAMP-ITEMS
No. 949 SELF-THREADING
OVERSIZE DRAIN PLUGS
ORDER FROM YOUR JOBBER
CHAMP-ITEMS, INC., ST. LOUIS 14, MO.

MEETS EVERY SEALING NEED!

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GASKET & JOINT
SEALING COMPOUND
7 BASIC BLENDS
Makes all assemblies
leakproof and
pressure tight
at Automotive Jobbers
RADIATOR SPECIALTY CO.
Charlotte, North Carolina

Calendar Of Coming Events

Dealers Conventions

Sept. 17-18—Minnesota Automobile Dealers Assn., St. Paul Hotel, St. Paul, Minn.

Sept. 18-19—South Dakota Automobile Dealers Assn., Mitchell, S.D.

Sept. 23-25—Texas Automotive Dealers Assn., Commodore Perry Hotel, Austin, Texas.

Sept. 23-25—Colorado Automobile Dealers Assn., Glenwood Springs, Colorado.

Sept. 24-25—Wisconsin Automotive Trade Assn., Hotel Schroeder, Milwaukee.

Sept. 26-28—New Jersey Automotive Trade Assn., Chalfonte-Haddon Hall, Atlantic City.

Sept. 30-Oct. 2—Tennessee Automotive Assn., Gatlinburg, Tenn.

Sept. 30-Oct. 3—New York State Automobile Dealers, Inc., 33rd Annual Convention. The Concord, Kinneasha Lake, N.Y.

Oct. 3-4—25th Annual State Convention, Kansas Motor Car Dealers Assn., Baker Hotel, Hutchinson, Kansas.

Oct. 14-26—Automotive Trade Assn. of Virginia, John Marshall Hotel, Richmond.

Oct. 21-22—Oklahoma Automobile Dealers Assn., Skirvin Hotel, Oklahoma City.

Oct. 21-23—Florida Automobile Dealers Assn., Fort Harrison Hotel, Clearwater, Fla.

Oct. 21-23—Tenth Annual Convention, National Independent Automobile Dealers Assn., Hotel New Yorker, New York City.

Oct. 21-23—Automobile Dealers Assn. of Alabama, Inc., Buena Vista Hotel, Biloxi, Miss.

Oct. 30-31—Illinois Automotive Trade Assn., Pere Marquette Hotel, Peoria.

Nov. 3-5—Texas Independent Automobile Dealers 12th Annual Convention, Statler-Hilton Hotel, Dallas.

Nov. 11-13—Kentucky Automobile Dealers Assn., Seelbach Hotel, Louisville, Kentucky.

Nov. 13—Connecticut Automotive Trades Assn., Hotel Statler, Hartford.

Dec. 2-4—Ohio Automotive Dealers Assn., Cleveland, Ohio.

Dec. 4—Utah Automotive Dealers Assn., Salt Lake City.

Jan. 26-30, 1957—40th annual NADA Convention and NAD Equipment Exhibition, San Francisco, Calif.

June 20-23—Independent Garage Owners of America 2nd Annual Convention, Toledo, Ohio.

Automobile Shows

Nov. 10-17—International Autorama, Commercial Museum, Phila., Pa.

Dec. 8-16—National Automobile Show, New Coliseum, New York.

Dec. 28-Jan. 6, 1957—Annual Upper Midwest Auto Show, Minneapolis Auditorium, Minneapolis.

Jan. 5-13, 1957—Chicago Auto Show, International Amphitheatre, Chicago, Ill.

(Continued on page 185)

Classified Advertisements

FOR SALE: Specialized Automotive parts jobber and service dept., by owner. Within 50 miles of San Francisco, the fastest growing city. Box 44, Motor Age, 5601 Chestnut St., Philadelphia 39, Pa.

Good Franchise Lines—24 years in business, wish to retire. Asking \$38,000 cash or terms with good security. Box 45, Motor Age, 5601 Chestnut St., Philadelphia 39, Pa.

For Sale: Florida: Garage, profitable and well established, modern building, excellent location in fastest growing section of Florida. Other interests demand immediate relinquishment of ownership. Write Box 42, Motor Age, 5601 Chestnut St., Philadelphia 39, Pa.

Sales Development—Coated Abrasives or Pressure sensitive tapes. Established importing firm with expansion program requires able individual familiar with jobber set-up & distribution. Sales ability essential. Excellent opportunity—Submit complete information Box #43, Motor Age, 5601 Chestnut Street, Philadelphia 39, Pa.

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①

NEW!

a body solder
that AIRDRIES
in 5 to 15
minutes!



Swiss PERMA-BOND Plastic Fiberglass Solder

Terrific time and cost saver! One application, any thickness thoroughly airdries in 5 to 15 minutes—ready to easy sand and paint. Super adhesion. Order from your jobber.

SWISS LABORATORY, Cleveland 14, Ohio

If adds up...
The new, improved
SOL-SPEEDI-DRI



- UNMATCHED for low, annual USE-COST!
- The most DUSTLESS oil and grease absorbent you can buy!

GET A FREE SAMPLE FROM

SPEEDI-DRI CORP., Menlo Park, N.J.

Jan. 19-26 — Pittsburgh Automobile Show, Hunt National Guard Armory, Pittsburgh, Pa.
 Jan. 19-27 — Detroit Auto Show, State Fair Coliseum, Detroit.
 Jan. 20-Feb. 3 — Houston National Automobile Show, Sam Houston Coliseum, Houston.
 Feb. 2-10 — Omaha Auto Show, Civic Auditorium, Omaha.
 Feb. 4-9 — Denver Automobile Show, Denver Coliseum, Denver.
 Feb. 9-16 — Milwaukee Auto Show.
 Feb. 9-16 — Albuquerque Auto Show, Coliseum Bldg., State Fair Grounds, Albuquerque, N. M.

General

Sept. 20-22 — Automotive Parts, Re-

builders Association Convention and Trade Show, Edgewater Beach Hotel, Chicago, Ill.
 Oct. 22-26 — 44th National Safety Congress and Exposition, Conrad Hilton, Congress, Morrison and LaSalle Hotels, Chicago.
 Oct. 25-26 — Automotive Wholesalers of Texas annual convention and booth conference, Statler-Hilton Hotel, Dallas, Texas.
 Nov. 1-12 — National Diesel Engine Meeting, Society of Automotive Engineers, The Drake, Chicago, Ill.
 Nov. 8-9 — National Fuels and Lubricants Meeting, Society of Automotive Engineers, The Mayo, Tulsa, Okla.

Dec. 2-4 — Third Annual Auto Trim Show, Sherman Hotel, Chicago.
 Jan. 14-18, 1957 — Annual Meeting, Society of Automotive Engineers, The Sheraton-Cadillac and Statler Hotels, Detroit, Mich.
 Mar. 7-10 — Pacific Automotive Show, Civic Auditorium, Seattle, Washington.
 Apr. 4-7 — Southwest Automotive Show, Automobile Bldg., Fair Park, Dallas, Texas.
 Apr. 25-27 — Southeast Automotive Show, Dinner Key Auditorium, Miami, Florida.
 May 9-12 — Midwest Automotive Show, Inc., Kiel Auditorium, St. Louis, Missouri.

MORE MONEY... LESS WORK

with PIT-BAR PRODUCTS

More car washers — polishers everywhere now use PIT-BAR's lambswool discs, bonnets, mitts, yarn type polishers, synthetic products, imported and domestic chamois. All PIT-BAR products fully guaranteed — outlast — out-perform all others.

M-19 POLISHER
M-9 Polisher the finest, longest-wearing polisher ever made — over 32 cars can be polished with same pad — will not grab — will not unravel — the professional choice for a heavy duty polisher — M-22 Polisher recommended where price is a factor.

MIRASYN WASH MITT
Mirasyn wash mitt featuring heavier, denser pile than any other synthetic — has a long lasting, soft as down finish that will not scratch. Ask about denel and cotton wash mitts.

For Foster Service in the South Contact —
SHIPP AND PAYNE • DALLAS, TEXAS
MARTIN KIDDER • FORT LAUDERDALE, FLORIDA
EBERT CO. • KANSAS CITY, MISSOURI

PIT-BAR MANUFACTURING CO.
3311 EAST 45TH ST.
LOS ANGELES 58, CALIFORNIA

XCELITE Hand Tools
PREFERRED BY THE EXPERTS

XCELITE
Square Bladed
Screwdrivers

BIG HANDLES
FOR A REAL GRIP

The rugged plastic handles of XCELITE screwdrivers are $\frac{3}{4}$ " to 1-5/16" dia. They fit your hand and fill your hand!

BIG SIZE
RANGE FOR
ALL YOUR JOBS

Stubby to 24" blades
 $\frac{1}{8}$ " to 7/16" tips

... such as Chrome-Vanadium blades with tips accurately ground and gauged to fit the screw slot snugly. Sure, an XCELITE screwdriver costs a little more — but put one in your hand and you'll never want to work with anything less! ASK YOUR AUTO SUPPLIER.

XCELITE, INC.

For Originality
LOOK TO **XCELITE**

**WOULD YOU LIKE TO MAKE
THIS TEST IN YOUR SHOP?**

SAVE
50 to 90%
IN LABOR
COSTS
ALONE
WITH

LA DESS STRETCH CLAMPS

For more information and free trial offer—write TODAY to:
Dept. MA96—2201 Hamilton Street.

LA DESS MF'G CO., SIOUX CITY, IOWA

Hey, Mac! Get a Rinmac SPRING SHACKLE JACK!

Rinmac — the Mechanic's Friend — now has the up-to-date method for Shackle Bolt Bushing removal and replacement. Two steel jaws, working on opposite-direction threads, spread spring and chassis apart when handle is turned, removing tension from shackle and leaving bushing free. No strain . . . no pain!

Ask your jobber or write for literature

RINCK-McILWAINE, INC.
16 HUDSON STREET • NEW YORK, N. Y.

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"SOLEX® makes my job easier and safer,"

*Give your customers
this added comfort
and safety!*

says E. B. Medley,
holder of a 20-year safe-driving award



Mr. Medley averages better than 90,000 miles a year for East Texas Motor Freight Lines, Inc., Dallas, Texas. He is fast approaching the two-million-mile mark and is the holder of a 20-year safe-driving award. Talk with this truck driver about fatigue-reducing factors and safety, and you're talking with an expert.

Here's what he says about Solex Safety Glass: "I've driven in cabs with clear glass and it gets pretty

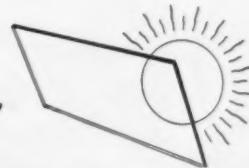
wearisome. You come up over a hill and the sun hits you square in the eyes. You tense up and squint. Sometimes you wonder if your eyes can adjust to it. It's a real hazard.

"With Solex Safety Glass it's a different story. Solex keeps out a lot of glare and heat. I get back off a run feeling more rested than I used to. I feel safer driving. Solex, you can bet, has helped me get my 20-year safe-driving award."

Install Solex Safety Glass and

give your customers added comfort and safety. Solex is available in the well-known types of Pittsburgh Safety Glass—Duplate® and Duolite®—as well as in Herculite® and conventional plate glass.

For more information on Solex, write to the Pittsburgh Plate Glass Company, Room 6364, 632 Fort Duquesne Boulevard, Pittsburgh 22, Pennsylvania.



SOLEX® "the best glass under the sun!"



PAINTS • GLASS • CHEMICALS • BRUSHES • PLASTICS • FIBER GLASS

PITTSBURGH PLATE GLASS COMPANY

IN CANADA: CANADIAN PITTSBURGH INDUSTRIES LIMITED

The Last Laugh



Fan: See that big fellow playing fullback. I think he'll be our best man next year.

Coed: Oh, darling, this is so sudden.

Then there is another little girl in the neighborhood who claims she is descended "from a long line her mother once listened to."

Mother (explaining to her small daughter how to tell time): These are the hours, these are the minutes and these are the seconds.

Daughter: Mummy, where are the jiffies?

When told by the mental patient he was writing himself a letter, the doctor asked, "And what are you telling yourself?"

"How should I know," the patient answered, irritated. "I won't get the letter until tomorrow."



*"What becomes of a baseball player when his eyesight fails?"
"He becomes an umpire."*

*Old timer: My father was a great western politician in his day.
Friend: Yes? What did he run for?
Old timer: The border.*

Then there was the dry cleaning company that advertised: "No matter how bad the stain is, we'll take it out and sew up the hole."

*Two motorists met on a street too narrow for both cars to pass.
"I'll never back up for an idiot," yelled one driver.*

"That's all right," said the other, shifting into reverse, "I always do."

*Teacher: Johnny, what are the seasons?
Johnny: Baseball, football, basketball and—vacation.*

*Fred: Was her father rough with you when you told him you had secretly married his daughter?
Ted: Was he? He nearly shook my arm off.*

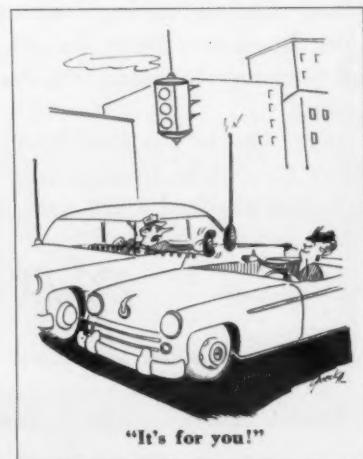
The second floor tenant called the party below and shouted: "If you don't stop playing that blasted saxophone, I'll go crazy."

"I guess it's too late," came the reply, "I stopped an hour ago."

Lawyer: "Here's my bill for services. You can pay \$500 down and \$50 a month for the next 24 months."

Client: "Sounds like buying an automobile."

Lawyer: "I am."





**FINEST Get UP
and GO...**

1 10-Up INNER-RING augments pressures to improve sealing efficiency and conformability; also takes up wear as it develops over tens of thousands of miles of operation.

2 10-Up CAST-IRON RING with its gentle mating action of graphitic iron insures immediate sealing while chrome plated rail is being seated.

3 10-Up CHROME PLATED RAIL provides an added barrier against blow-by and a superior oil wiping action by placing additional contact ring on the cylinder wall.

demands Advanced
10_{up} Compression Ring
Performance, TOO!

QUICKER SEATING . . . LONGER LIFE! You need both today in compression rings as never before. The increased demands for control-of-oil and sealing-against-vacuum in today's and tomorrow's new family of engines again emphasizes the importance to you of Ramco Engineering Leadership. For, in the Ramco 10-Up compression ring, you have the answer . . . and have had it for over 15 years! You'll find this years-ahead ring performance in both Ramco 10-Up Sets for older cars . . . in Ramco C-9 Sets for the newest family of engines. Ramsey Corporation, St. Louis 8, Mo.

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10 10H RTC C PISTON RINGS

that's All there is to it!

RIVETED SEGMENTS
BONDED SHOES
BOXED SETS

The Safest Thing
on Wheels...



New!

Two fast-moving assortments of Thermoid Bonded Shoes that service 90% of the popular car market. Include applications through 1956

Whether you use bonded shoes or riveted segments, always insist on Thermoid Custom-Built Brake Lining—the safest thing on wheels. See your Thermoid jobber.



Rubber Products



Hydraulic Brake Parts and Fluid

Thermoid

Thermoid Company • Trenton, New Jersey